

LAND SUITABILITY MAP

ABACA

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

PROVINCE OF SOUTH COTABATO



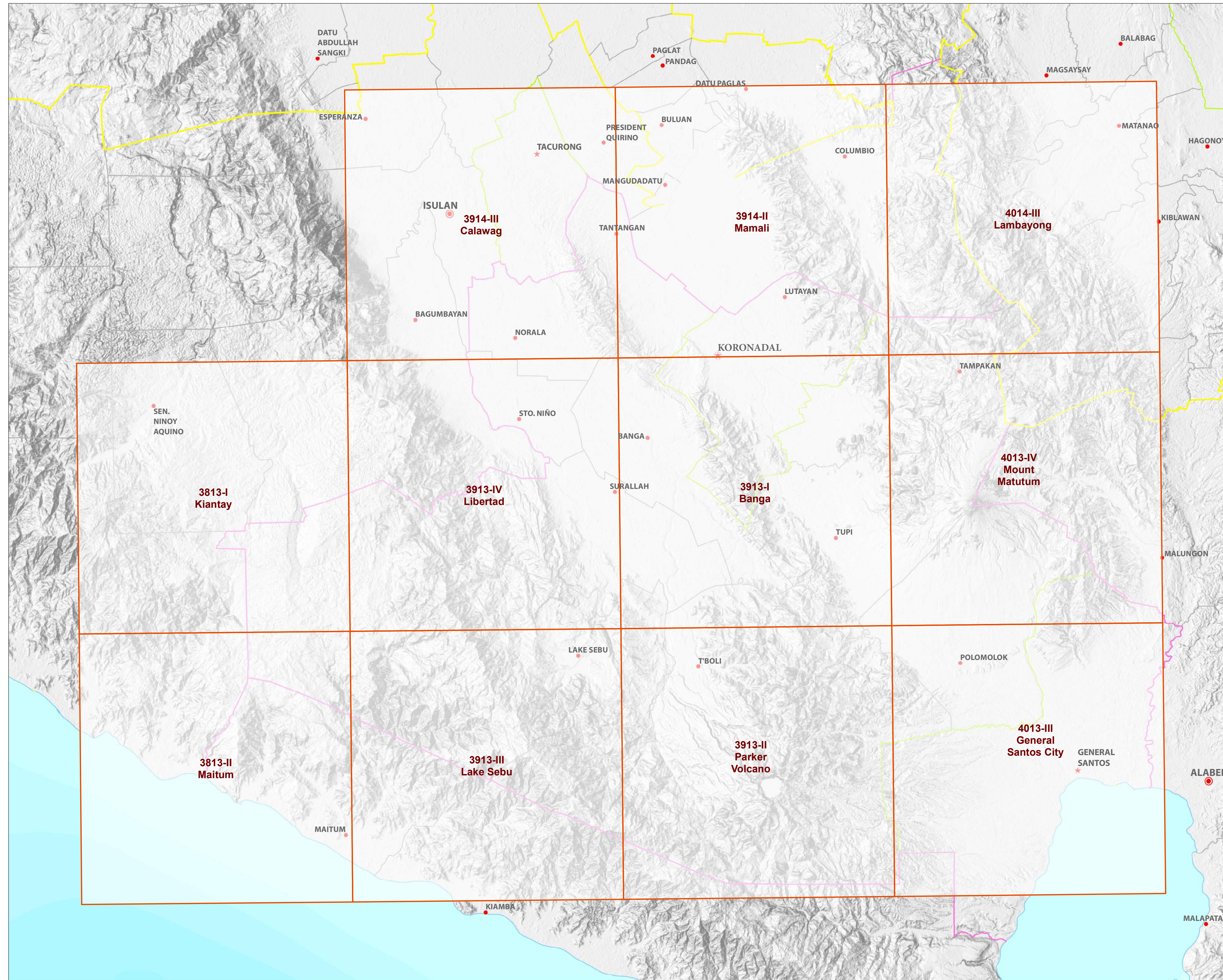
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
BUREAU OF SOILS AND WATER MANAGEMENT

SRDC Bldg., Elliptical Road Cor. Visayas Avenue, Diliman, Quezon City 1101
Tel/Fax No.: (+632) 332-9534 E-mail: bswmclientcenter@yahoo.com

MAP INDEX

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

PROVINCE OF SOUTH COTABATO



LEGEND

Places

- ★ Capital City
- ★ City
- Capital Town
- Town

Administrative Boundary

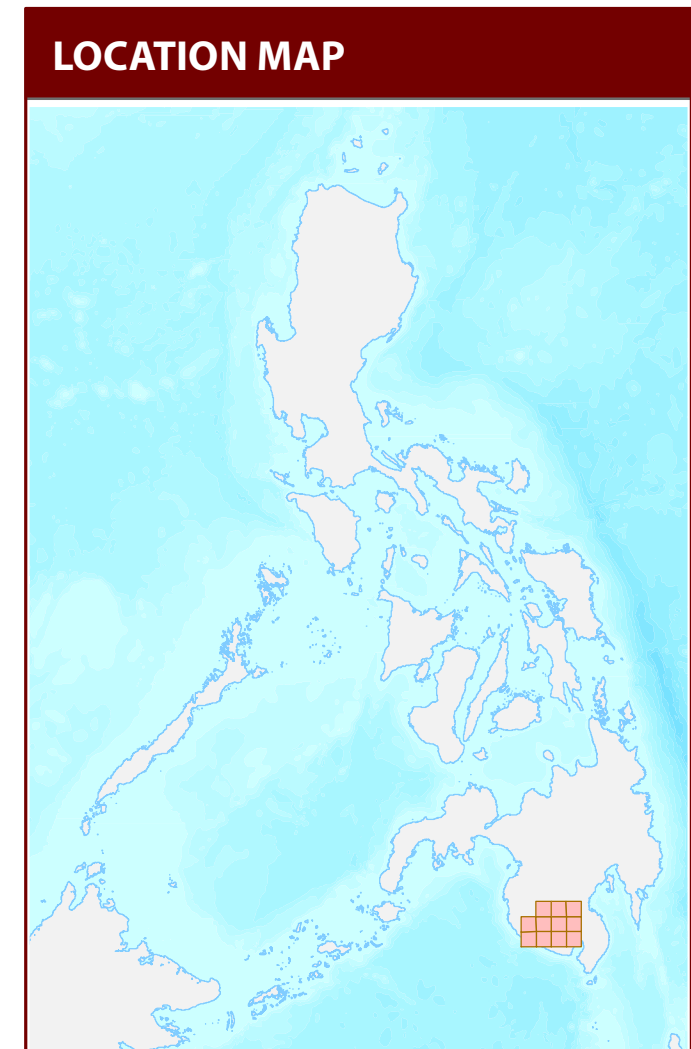
- Regional
- Provincial
- City
- Municipal

Map Index

- Index grid

Topographic Relief

Bathymetry



MISCELLANEOUS INFORMATION

Land suitability information produced by the Bureau of Soils and Water Management (BSWM) through the Land Resources Evaluation and Suitability Assessment of Strategic Production Areas for Major Commodities Project supported by the Philippine Council on Agriculture and Fisheries (PCAF) and funded by the Bureau of Agricultural Research (BAR).

Map produced by the Geomatics and Soil Information Technology Division, Bureau of Soils and Water Management (BSWM).

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 SRDC Bldg., Elliptical Road Cor. Visayas Avenue,
 Diliman, Quezon City 1101 Philippines
 Tel/Fax No. : (432) 332-9934 E-mail: bswmclientcenter@yahoo.com

LAND SUITABILITY MAP FOR ABACA

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS SOUTH COTABATO, REGION XII

EXTENT OF SUITABILITY FOR ABACA PRODUCTION BY MUNICIPALITY

MUNICIPALITY	EXISTING ABACA (Ha)			TOTAL EXISTING AREA (Ha)	EXPANSION AREA (Ha)						CONFLICT AREA (Ha)						TOTAL POTENTIAL EXPANSION AREA (Ha)
	S1	S2	S3		Coconut		Shrubland, unmanaged*		Grassland, unmanaged*		Corn		Banana		Other crops		
					S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	
BANGA	-	-	-	-	570	145	-	-	383	1,331	9,505	586	5	1	5	1	12,533
CITY OF KORONADAL (Capital)	-	-	-	-	2,215	401	35	105	202	1,254	6,024	581	-	-	-	-	10,817
LAKE SEBU	-	-	-	-	4	228	-	126	118	2,195	579	3,239	-	1	-	1	6,492
NORALA	-	-	-	-	367	139	-	-	189	530	2,055	50	-	-	-	-	3,329
POLOMOLOK	-	-	-	-	752	860	1	299	11	884	8,482	2,718	-	-	-	-	14,007
SANTO NIÑO	-	-	-	-	44	5	-	-	19	-	1,858	17	-	-	-	-	1,944
SURALLAH	-	-	-	-	607	219	17	82	54	807	9,435	2,359	-	-	4	-	13,584
TAMPAKAN	-	-	-	-	1,760	123	-	5	55	626	2,696	294	-	-	-	-	5,559
TANTANGAN	-	-	-	-	539	72	11	8	1,036	1,843	3,545	231	4	-	4	-	7,292
TBOLI	-	-	-	-	61	83	-	83	138	4,275	2,063	2,562	-	2	-	2	9,268
TUPI	-	-	-	-	3,362	766	-	25	132	893	1,641	1,824	-	-	-	-	8,641
TOTAL	-	-	-	-	10,282	3,042	64	733	2,336	14,638	47,882	14,462	9	4	13	4	93,467

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

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.

AGRONOMIC REQUIREMENT OF ABACA 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
Abaca	S1	<8	>50	CL, SiCL, SCL, SC, SiC, C, HC	WD,MWD, SPD	5.6 -7.2	high	none-slight	none-slight	none-few	<500	2001-4500	II, III, IV
	S2	8 - 30	30 - 50	FSL, L, SiL, SL	PD,VPD	5.1 - 5.5 7.3 - 7.8	medium	moderate	moderate	common	500-1500	1000-2000	I, II
	S3	>30	< 30	S, LS, CSL	ED	<5.0 - > 7.9	low	severe	severe	many	>1500	<1000 >4500	

SLOPE (%)
0 - 3 - level to gently sloping
3 - 8 - gently sloping to undulating
8 - 18 - undulating to rolling
18 - 30 - rolling to moderately steep
30 - 50 - steep
> 50 - very steep

SOIL DRAINAGE
ED - excessively drained
WD - well drained
MWD - moderately well drained
SPD - somewhat poorly drained
PD - poorly drained
VPD - very poorly drained

SOIL REACTION (pH)
< 4.5 - extremely acid
4.5 - 5.0 - very strongly acid
5.1 - 5.5 - strongly acid
5.6 - 6.0 - medium acid
6.1 - 6.5 - slightly acid
6.6 - 7.2 - neutral
7.3 - 7.8 - mildly alkaline
7.9 - 8.4 - moderately alkaline
> 8.5 - strongly alkaline

SOIL TEXTURE
Coarse
S - sand
LS - loamy sand
CSL - coarse sandy loam
SL - sandy loam
Medium
FSL - fine sandy loam
L - loam
SIL - silt loam
CL - clay loam
SiCL - silty clay loam
SCL - sandy clay loam

Fine
SC - sandy clay
SiC - silty clay
C - clay
HC - heavy clay

SOIL DEPTH (cm)
0 - 30 - very shallow
30 - 50 - shallow
50 - 100 - moderately deep
> 100 - deep to very deep

SURFACE IMPEDIMENT
ROCK OUTCROPS
< 10% - none - few
10 - 30% - common
> 30% - many

LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

ELEVATION
E12 - 500 - 1000m or 2000 - 2500m
E13 - < 500m or > 2500m

SOIL DRAINAGE
D2 - Somewhat poorly drained to poorly drained
D3 - Very poorly drained or excessively drained

SOIL DEPTH
Sh2 - Shallow to moderately deep (30 - 100cm)
Sh3 - Very shallow (< 30cm)

SOIL EROSION
E2 - Moderate erosion
E3 - Severe erosion

SLOPE/TOPOGRAPHY
T2 - Undulating to moderately steep
T3 - 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
1	E2-Sh2-Rc3	11	T2-E3-Rc3	21	T3-E3	31	T3
2	E12-Sh2-Rc2	12	T2-E3-Sh2-Rc2	22	T3-E3-Rc2	32	T3-E3
3	F2-D2	13	T2-E3-Sh2-Rc3	23	T3-E3-Sh2-Rc3	33	T3-E3-Rc3
4	F3-D2	14	T2-E12-E3-Rc3	24	T3-E3-Sh3-Rc2	34	T3-E3-Sh3-Rc3
5	Rc2	15	T2-E12-E3-Sh2-Rc2	25	T3-E3-Sh3-Rc3	35	T3-E12-E3
6	Sh2-Rc2	16	T2-E12-Sh2-Rc2	26	T3-E12-E3	36	T3-E12-E3-Sh3-Rc3
7	T2	17	T2-F2-D2	27	T3-E12-E3-Sh2-Rc3	37	T3-E13-E3-Sh3-Rc3
8	T2-E2-Sh2-Rc2	18	T2-F3-D2	28	T3-E12-E3-Sh3-Rc2	38	T3-E13
9	T2-E3	19	T2-Sh2-Rc2	29	T3-E13-E3-Sh3-Rc2	39	Tc
10	T2-E3-Rc2	20	T3	30	T3-F2-D2		

CODE	LANDUSE
4	Corn
81	Coffee
82	Cacao
85	Mango
91	Banana
105	Fruit trees, mixed
116	Coconut
126	Grassland
134	Shrubs, unmanaged

CLIMATE TYPE

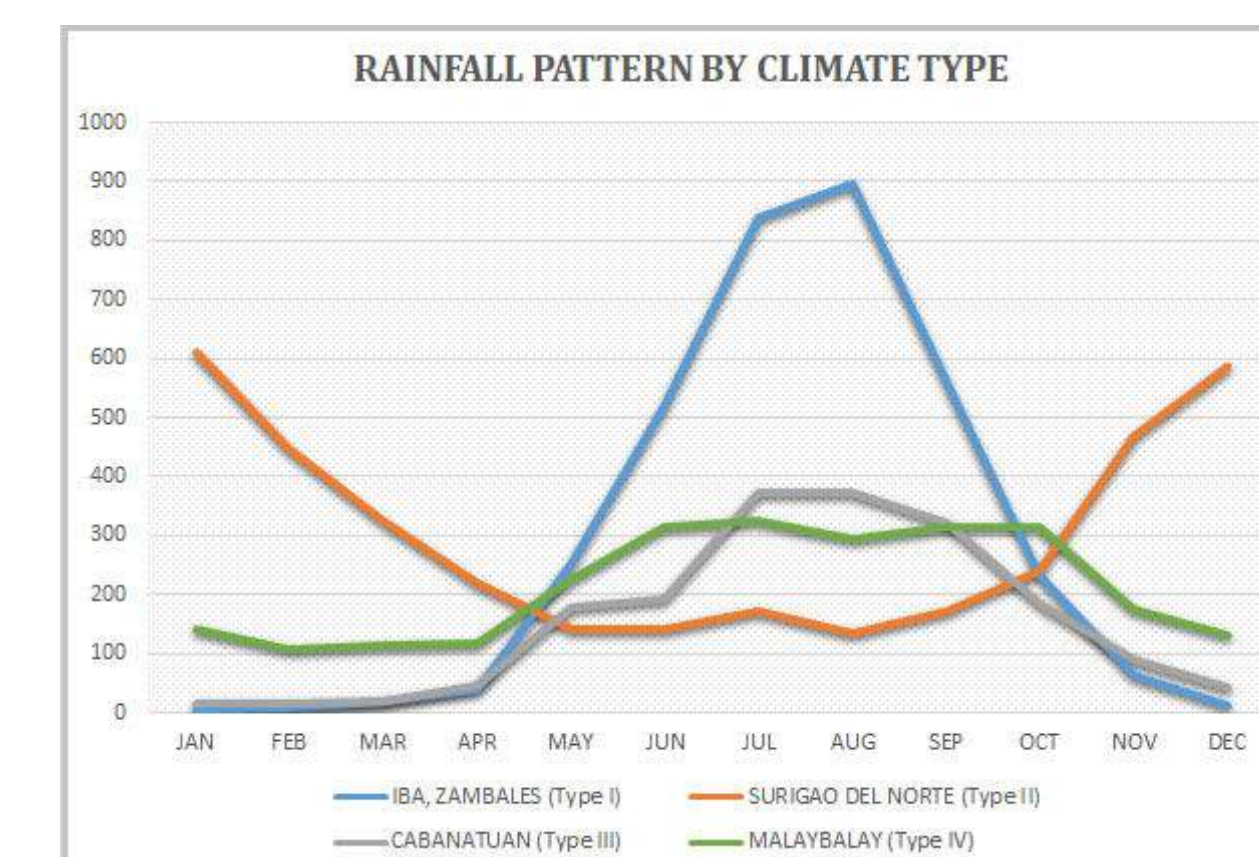
TYPE I : Two pronounced season, dry from November to April and wet during the rest of the year. Maximum rain period is from June to September

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.

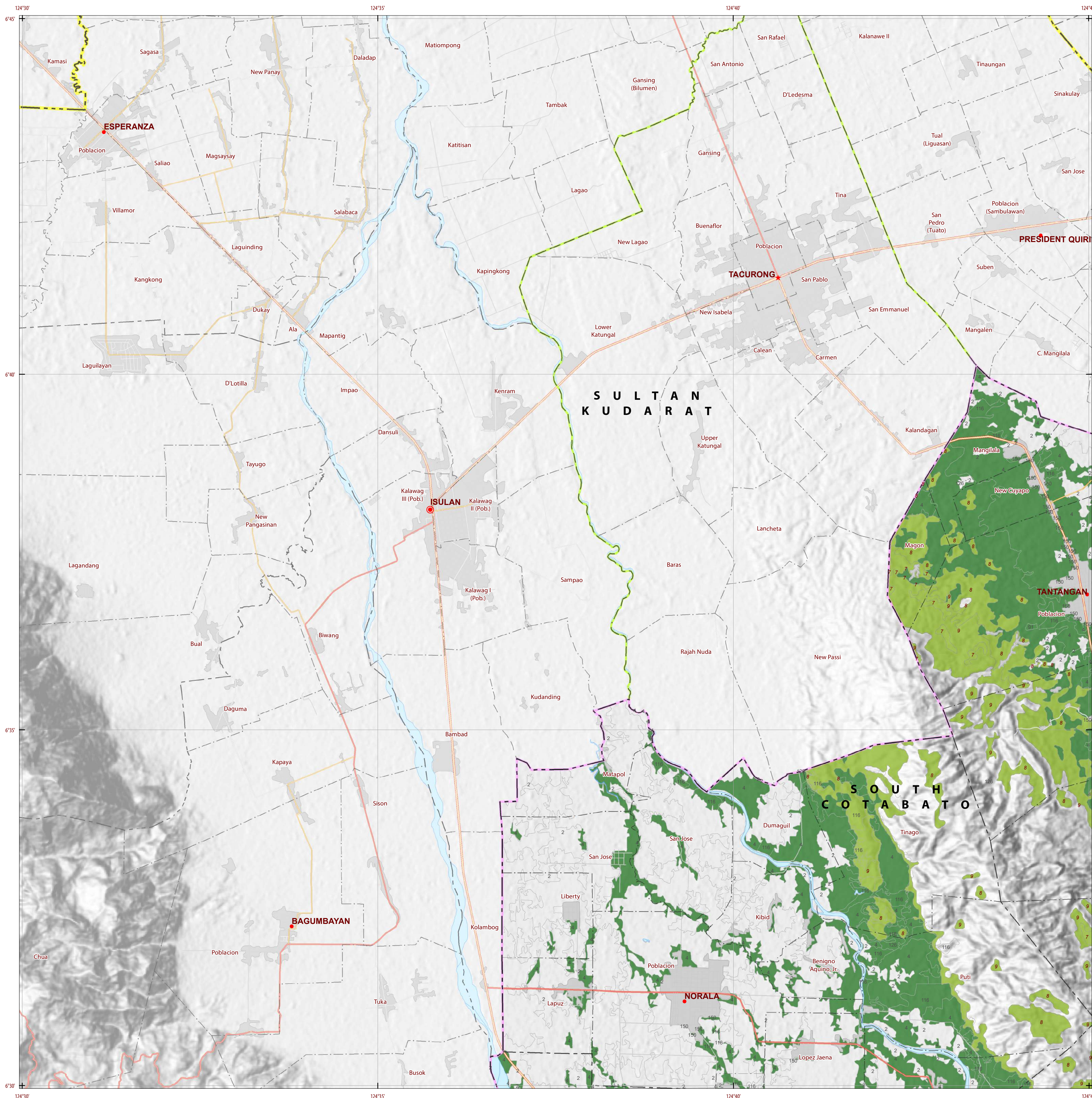
TYPE III : No very pronounced maximum rain period, with a dry season lasting only from one to three months, either during the period from December to February or from March to May. This type resembles Type I since it has a short dry season.

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

Small part in the Northern side of South Cotabato is classified as climatic Type III and in the Southern side is Type IV.

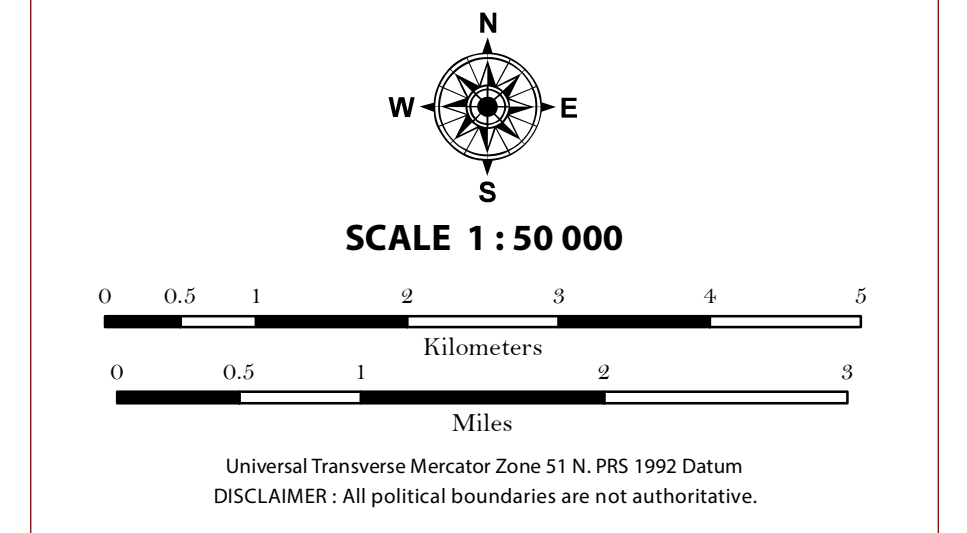


Source: PAGASA 2018, Climatological Normals (Rainfall), Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, <<https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>>.



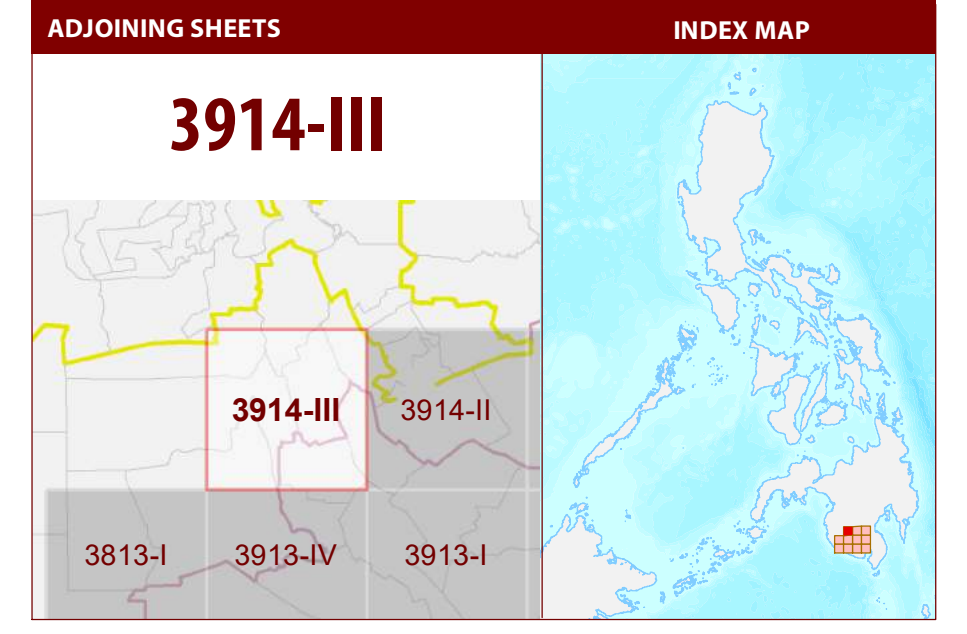
LAND SUITABILITY MAP ABACA

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



- LEGEND**
- SUITABILITY CLASSES**
- S1 Highly Suitable** - Land having no significant limitations 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.
 - S2 Moderately Suitable** - Land having limitations which in aggregate are moderately severe for sustained application of a given use; the limitations 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.
 - S3 Marginally Suitable** - 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**
- OTHER SIGNS**
- NGP Areas
 - Cacao
 - Land limitation
 - Land use

- CONVENTIONAL SIGNS**
- | ROADS | BOUNDARY | HYDROLOGY |
|------------|--------------|---------------------|
| Expressway | Region | Sea / Shoreline |
| Trunk line | Province | Lakes / Rivers |
| Primary | District | PLACES |
| Secondary | Municipality | Capital City / City |
| Tertiary | Barangay | Capital Town / Town |
- LAND USE**
- Built-up
 - Fishpond
 - Mangrove



MISCELLANEOUS INFORMATION

SOURCES OF INFORMATION: Topographic information taken from NAMRIA Topographic Map at 1:50,000 scale. Land resources information from the Agricultural Land Management and Evaluation Division (ALMED), Soils Survey Division (SSD) and Laboratory Services Division (LSD) of BSWM. Rice areas obtained from the Land Use System (FAO, 2015) and Philippine Rice Information System (PRISM) (IRRI, 2015). Data analysis and compilation through the Land Resources Evaluation and Suitability Assessment of Strategic Production Areas for Major Commodities Project implemented by BSWM (2017).

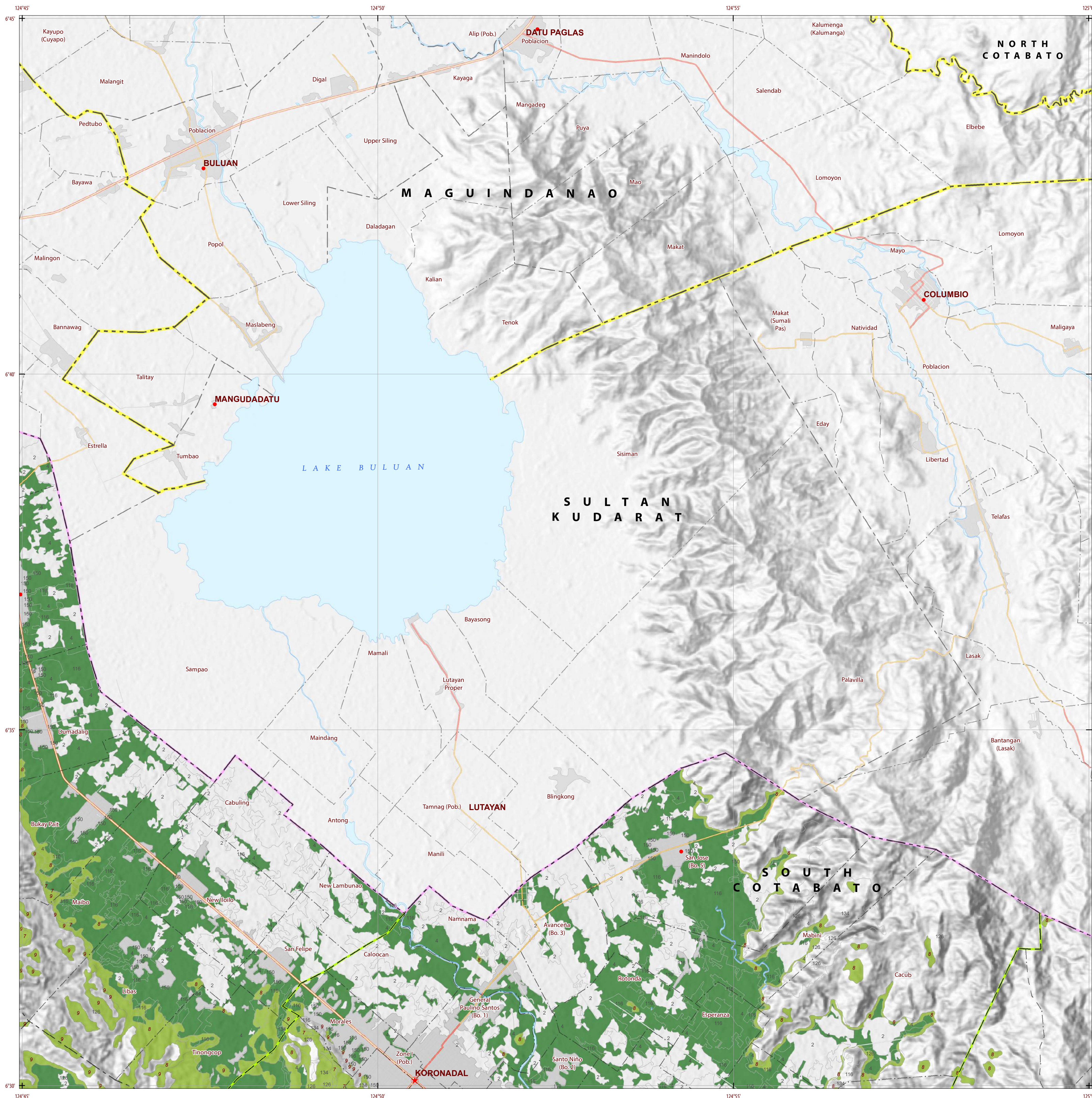
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LAND SUITABILITY MAP ABACA

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

SCALE 1 : 50 000

Universal Transverse Mercator Zone 51 N, PRS 1992 Datum
DISCLAIMER: All political boundaries are not authoritative.

LEGEND

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Not Suitable/ Not Relevant

OTHER SIGNS

- NGP Areas
- Cacao
- Land limitation
- Land use

CONVENTIONAL SIGNS

ROADS	BOUNDARY	HYDROLOGY
Expressway	Region	Sea / Shoreline
Trunk line	Province	Lakes / Rivers
Primary	District	PLACES
Secondary	Municipality	★ Capital City / City
Tertiary	Barangay	● Capital Town / Town

LAND USE

- Built-up
- Fishpond
- Mangrove

ADJOINING SHEETS

3914-II

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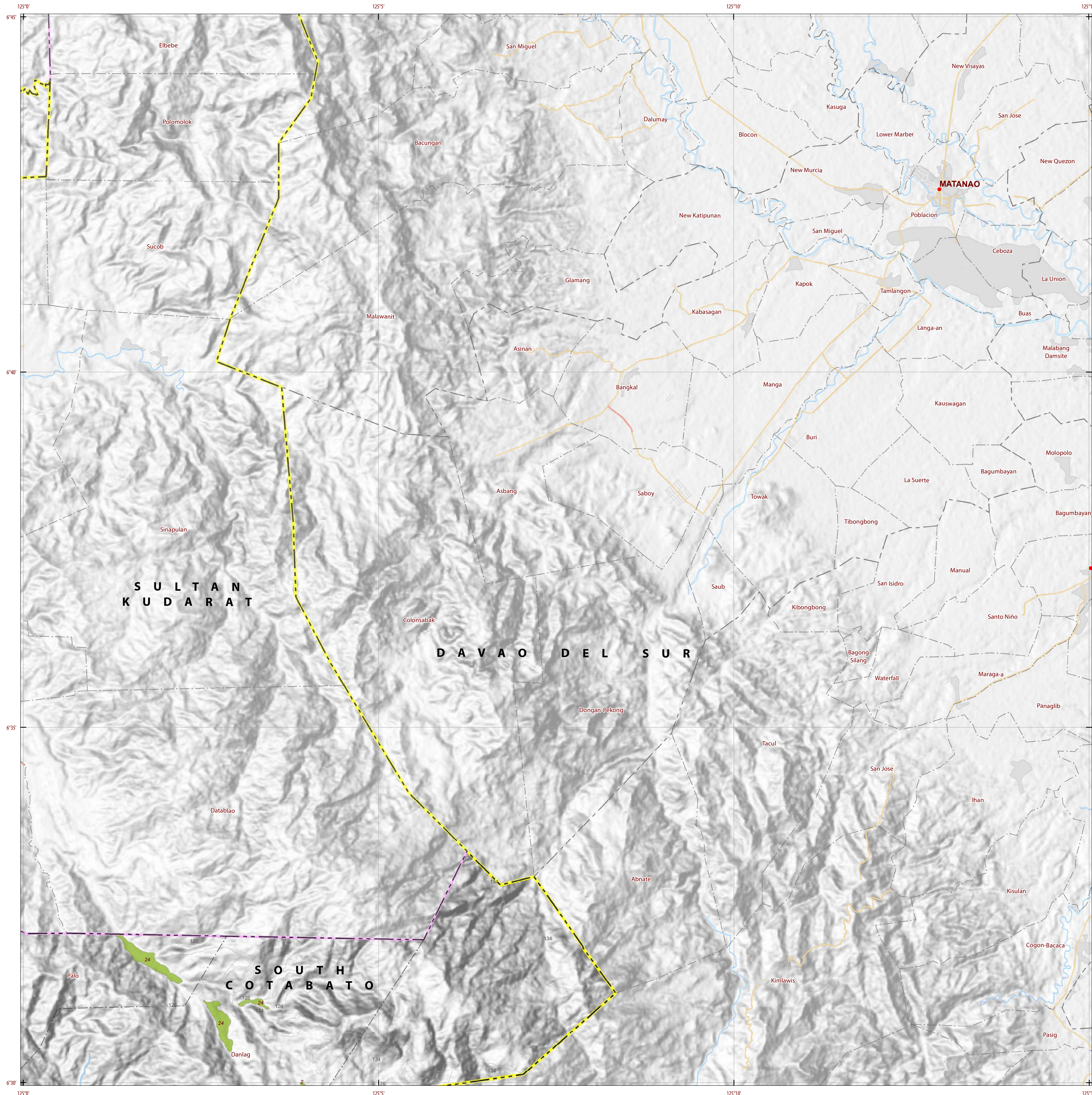
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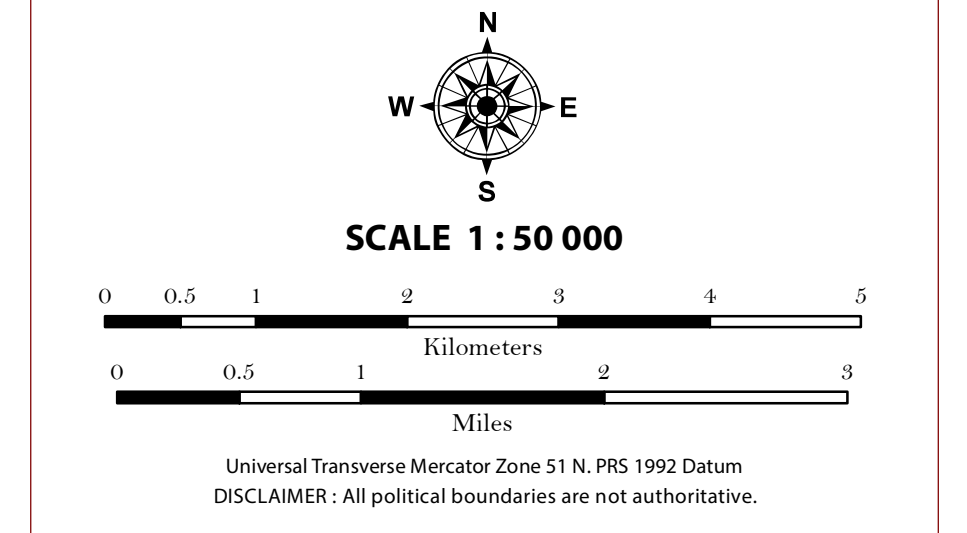
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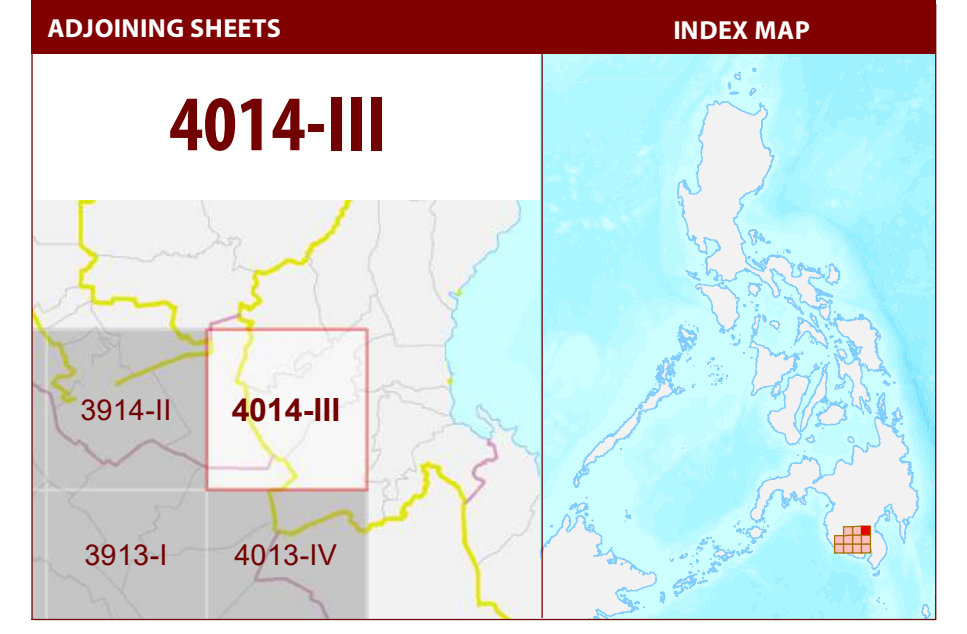
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- OTHER SIGNS**
- NGP Areas
 - Cacao
 - Land limitation
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- CONVENTIONAL SIGNS**
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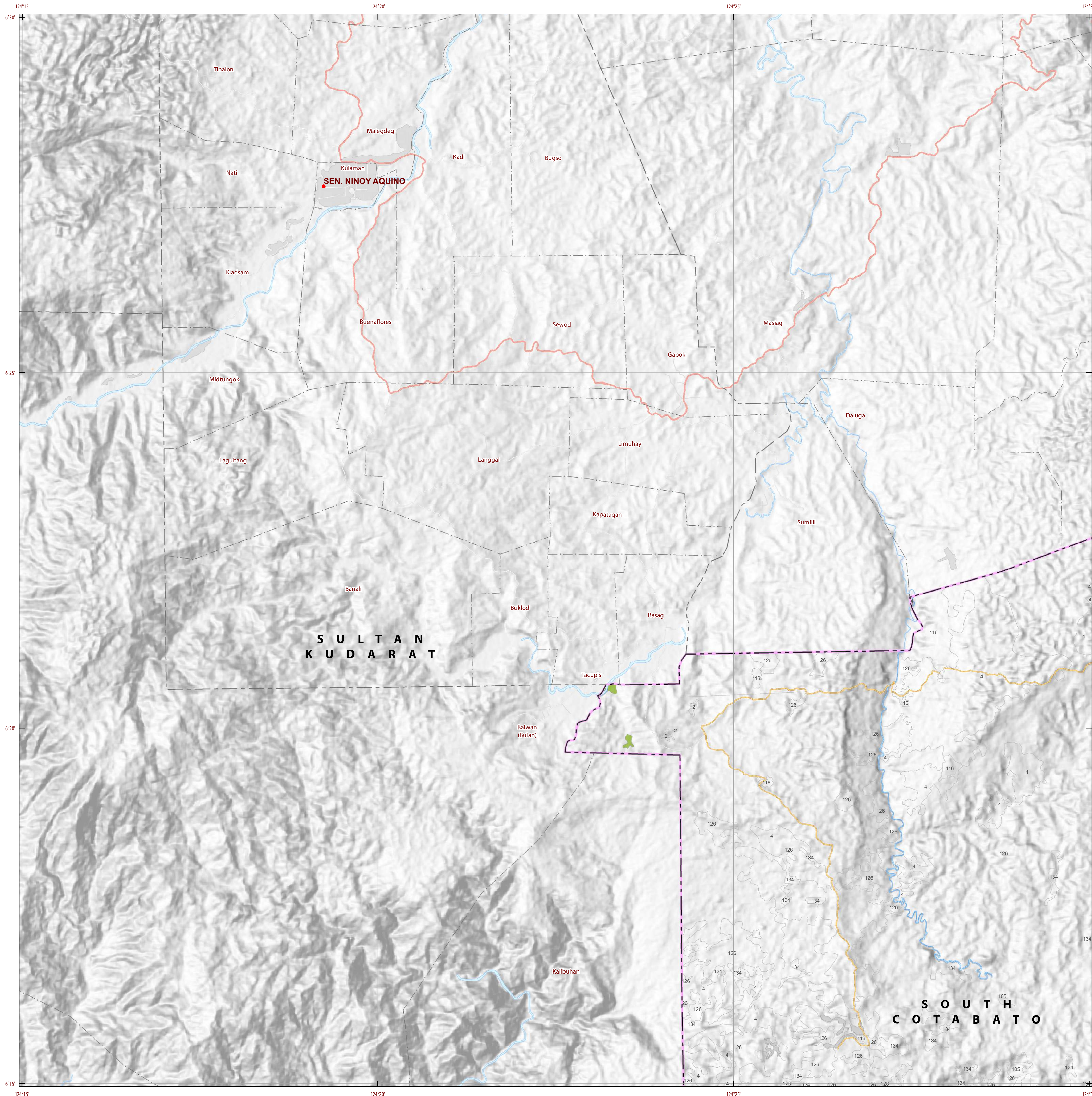
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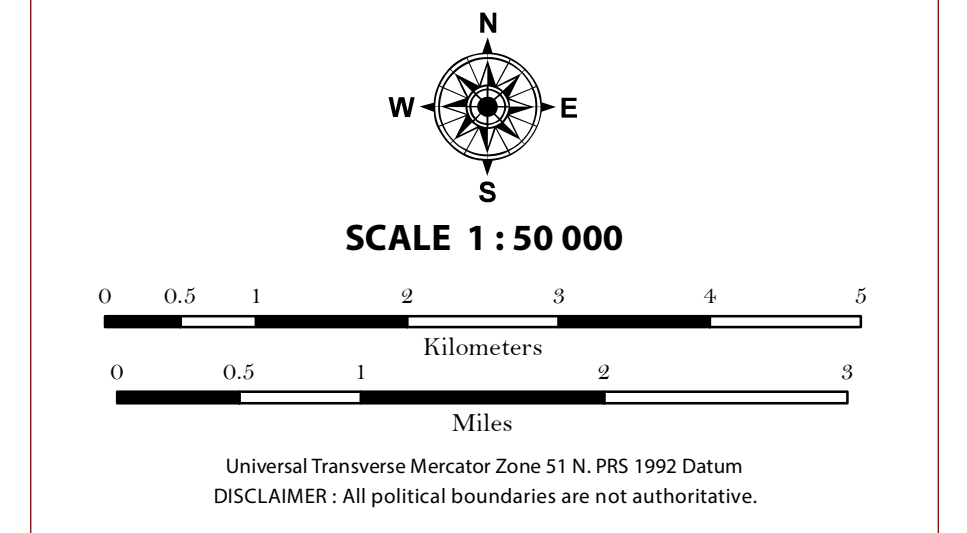
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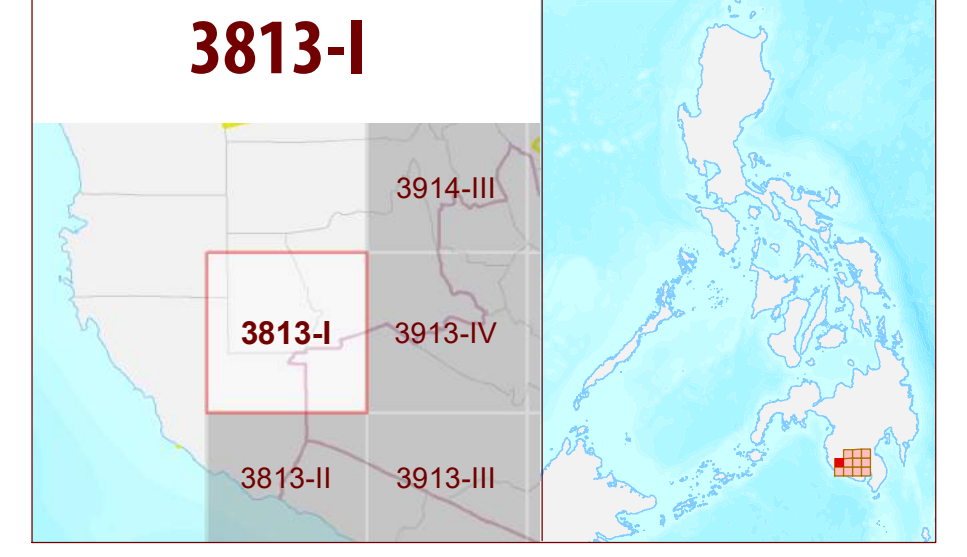
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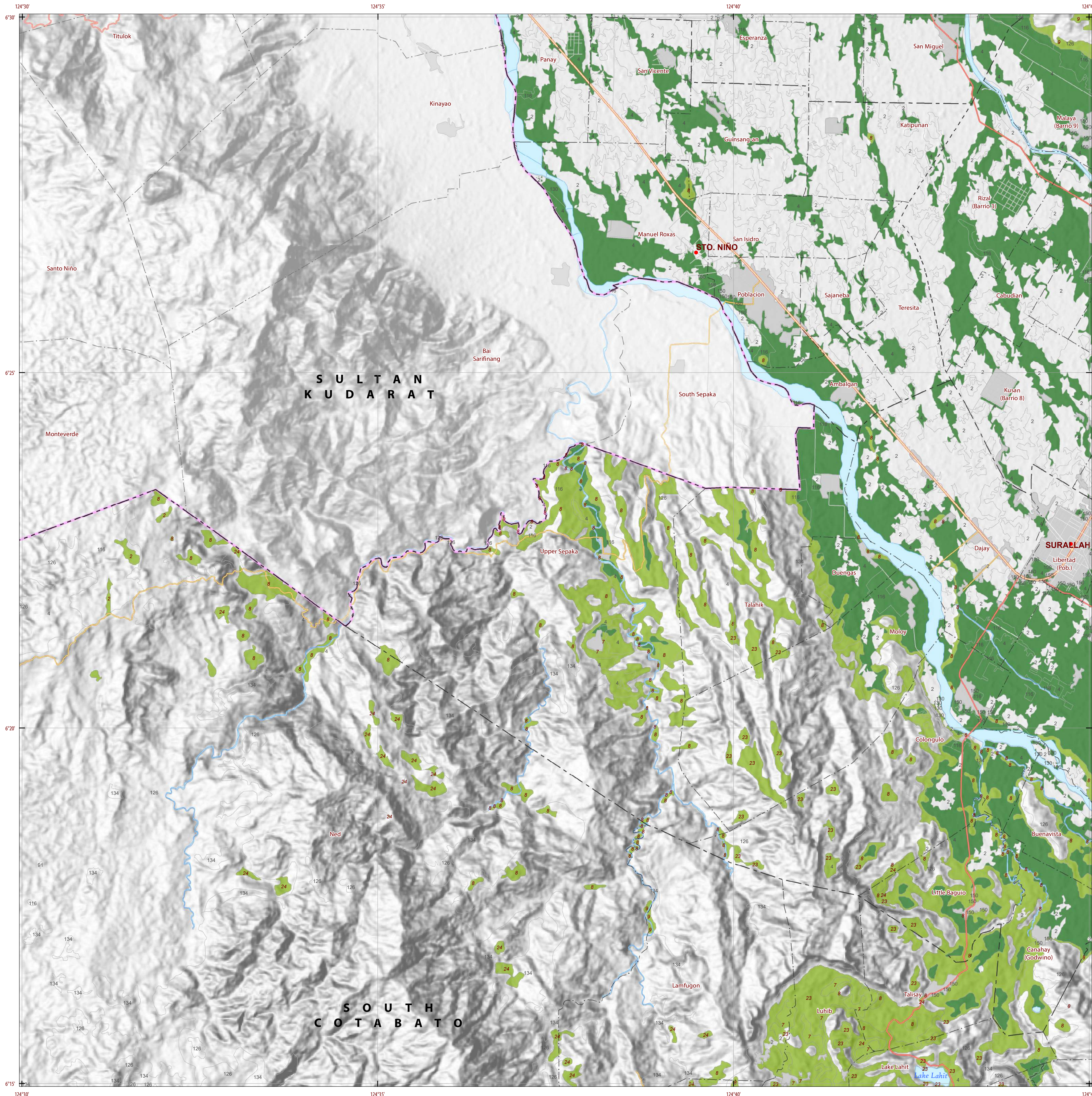
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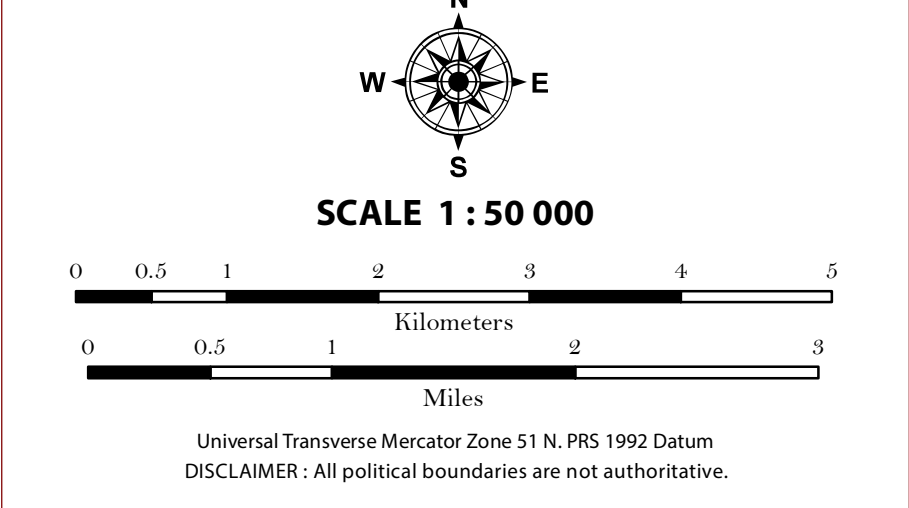
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LAND SUITABILITY MAP ABACA

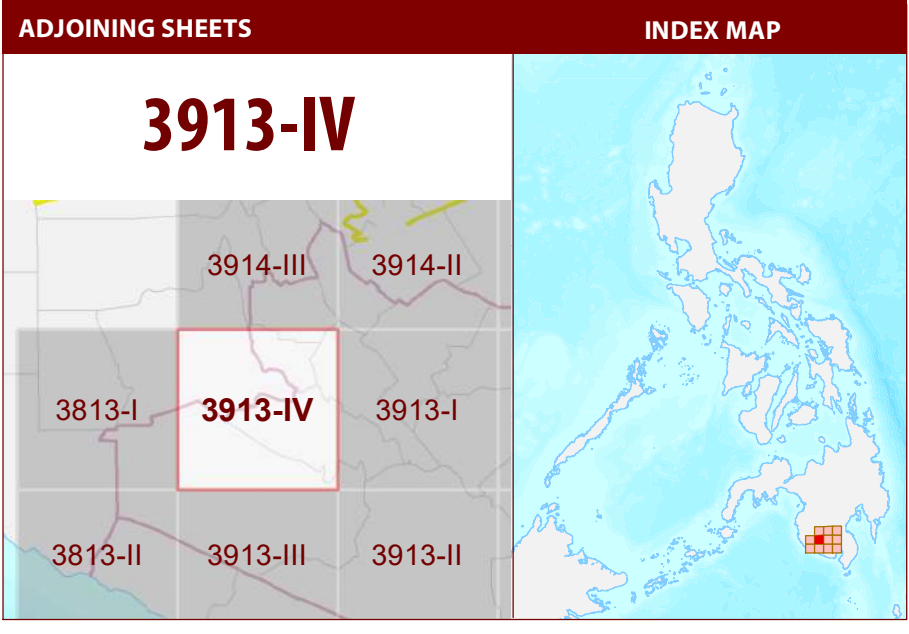
LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



LEGEND

- SUITABILITY CLASSES**
- S1 Highly Suitable** - Land having no significant limitations 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.
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 - Not Suitable/ Not Relevant**
- OTHER SIGNS**
- NGP Areas
 - Cacao
 - Land limitation
 - Land use

- CONVENTIONAL SIGNS**
- | | | |
|--------------|-----------------|-----------------------|
| ROADS | BOUNDARY | HYDROLOGY |
| Expressway | Region | Sea / Shoreline |
| Trunk line | Province | Lakes / Rivers |
| Primary | District | PLACES |
| Secondary | Municipality | ★ Capital City / City |
| Tertiary | Barangay | ● Capital Town / Town |
- LAND USE**
- Built-up
 - Fishpond
 - Mangrove



MISCELLANEOUS INFORMATION

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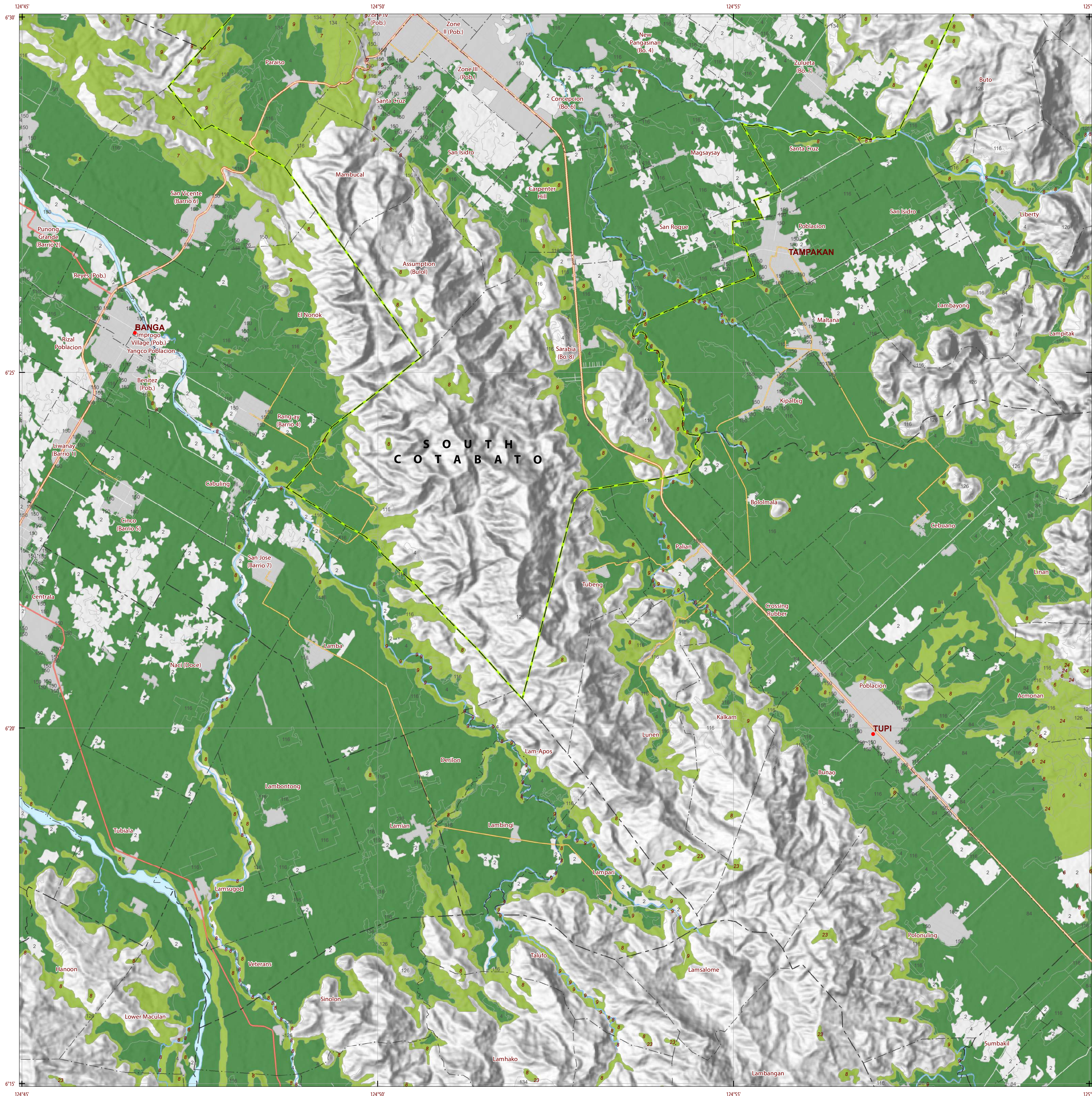
Project Leader : BERNARDO B. PASCUA
 GIS and Cartography : IRWIN K. SAMALCA

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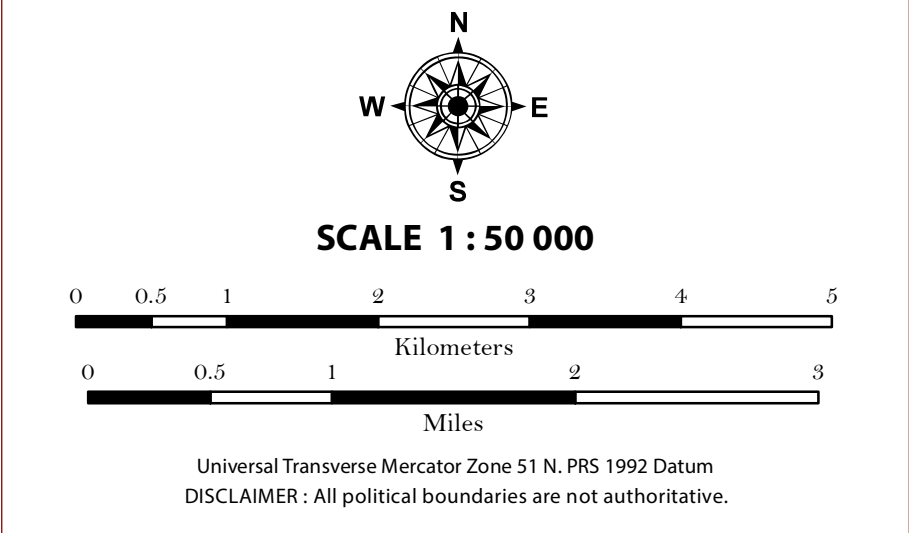
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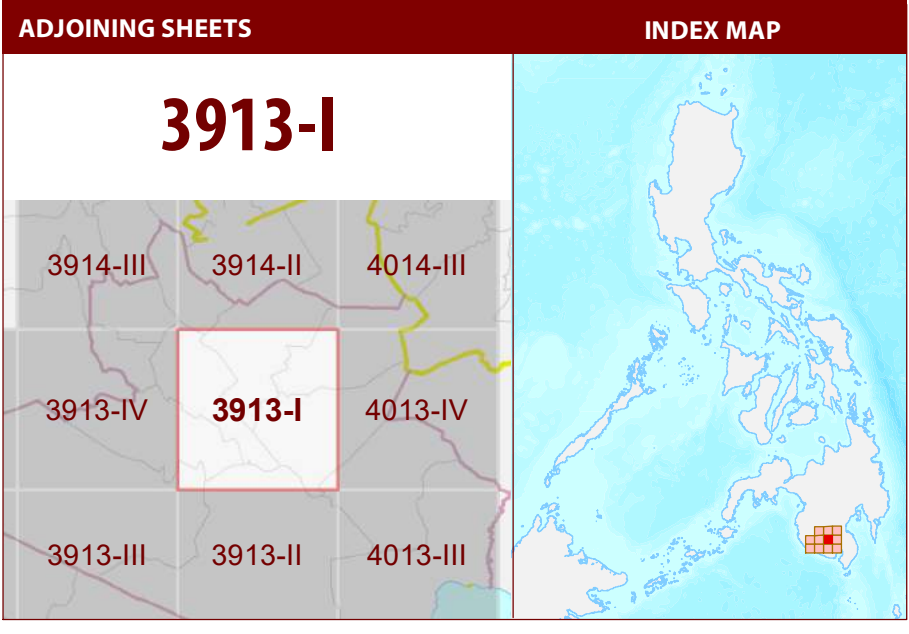
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- OTHER SIGNS**
- NGP Areas
 - Cacao
 - Land limitation
 - Land use

- CONVENTIONAL SIGNS**
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 - Fishpond
 - Mangrove



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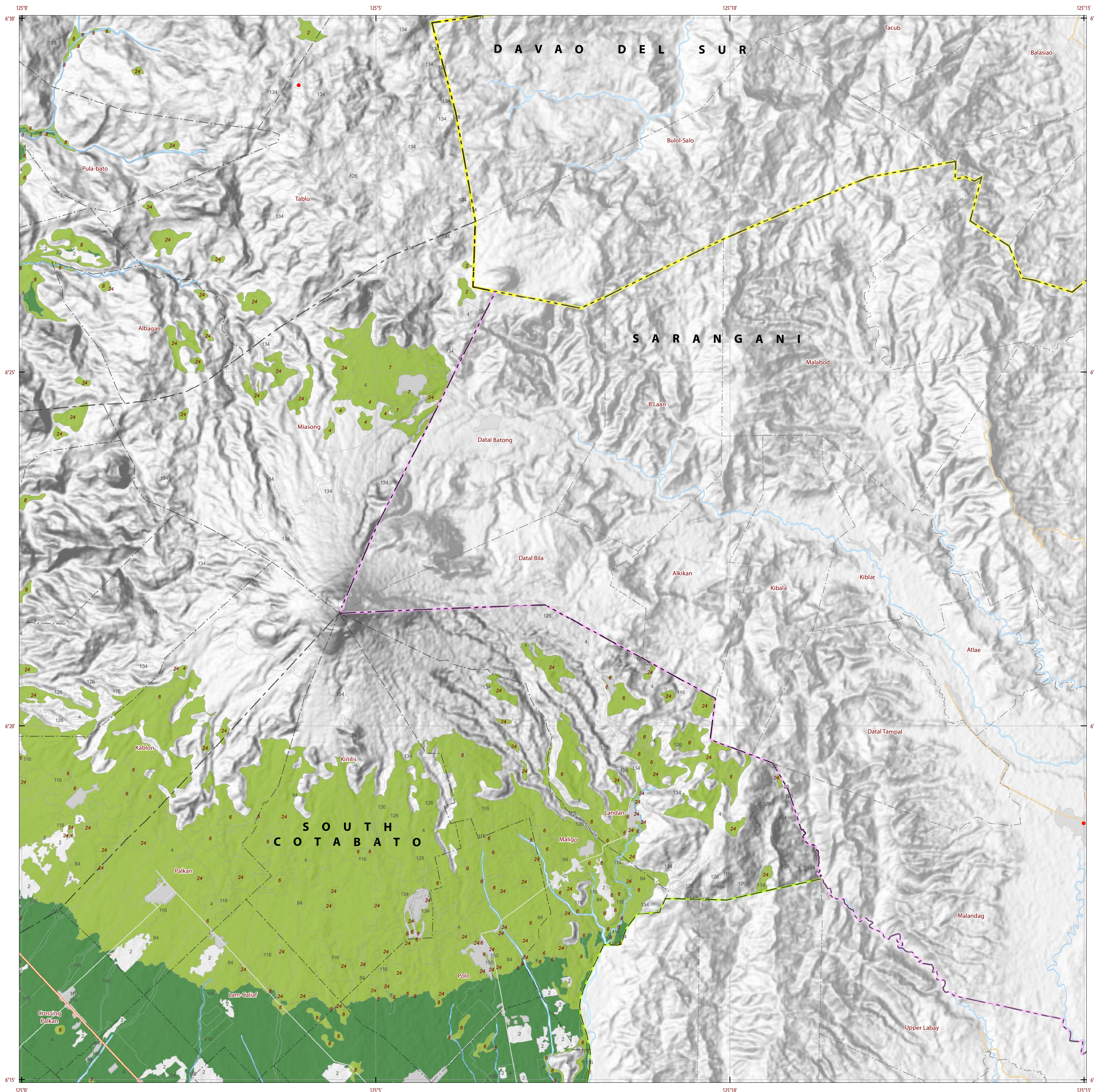
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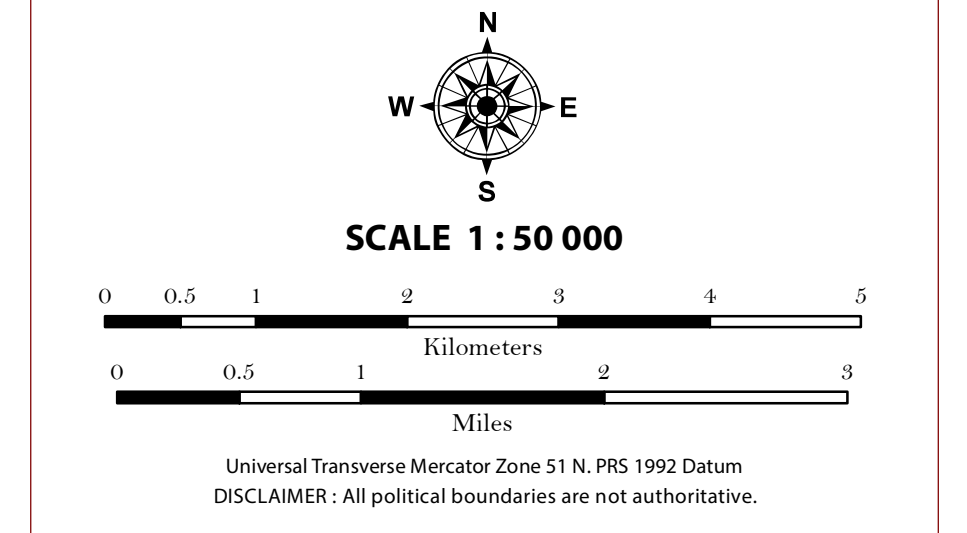
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LAND SUITABILITY MAP ABACA

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



LEGEND

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OTHER SIGNS

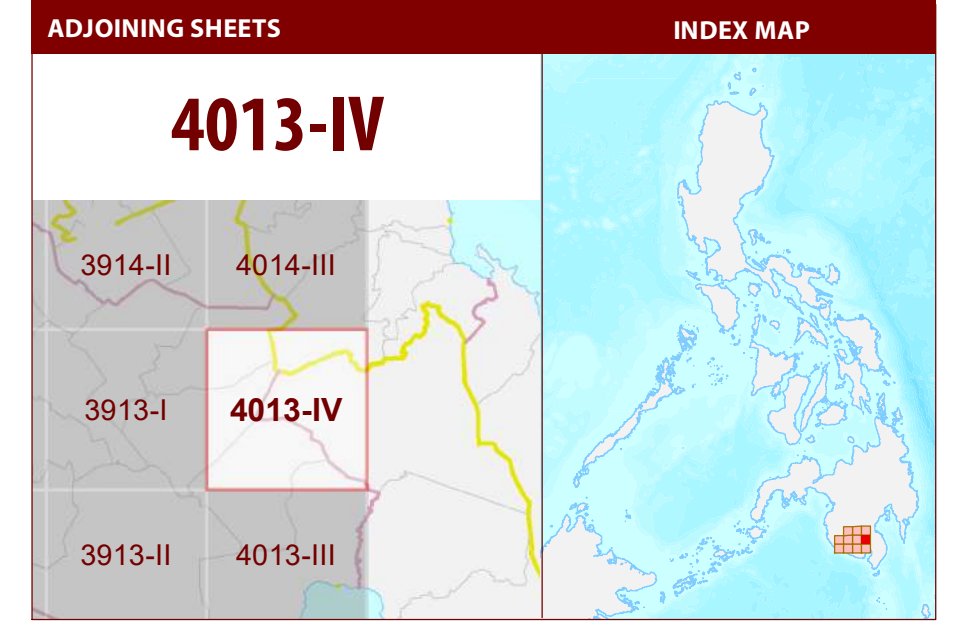
- NGP Areas
- Cacao
- Land limitation
- Land use

CONVENTIONAL SIGNS

ROADS	BOUNDARY	HYDROLOGY
Expressway	Region	Sea / Shoreline
Trunk line	Province	Lakes / Rivers
Primary	District	PLACES
Secondary	Municipality	Capital City / City
Tertiary	Barangay	Capital Town / Town

LAND USE

- Built-up
- Fishpond
- Mangrove



MISCELLANEOUS INFORMATION

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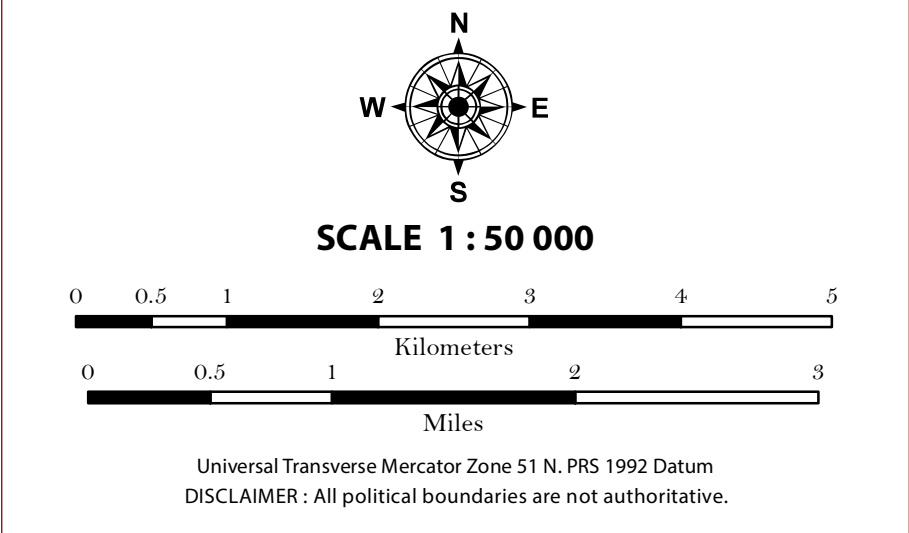
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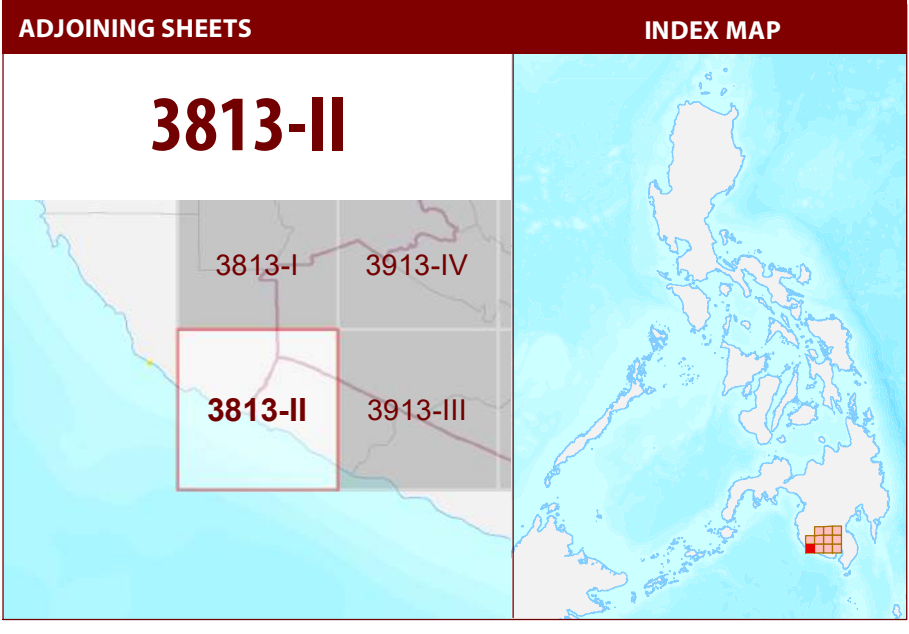
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- NGP Areas
 - Cacao
 - Land limitation
 - Land use

- CONVENTIONAL SIGNS**
- | | | |
|-----------------|-----------------|---------------------|
| ROADS | BOUNDARY | HYDROLOGY |
| Expressway | Region | Sea / Shoreline |
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| Primary | District | PLACES |
| Secondary | Municipality | Capital City / City |
| Tertiary | Barangay | Capital Town / Town |
| LAND USE | | |
| Built-up | Fishpond | Mangrove |



MISCELLANEOUS INFORMATION

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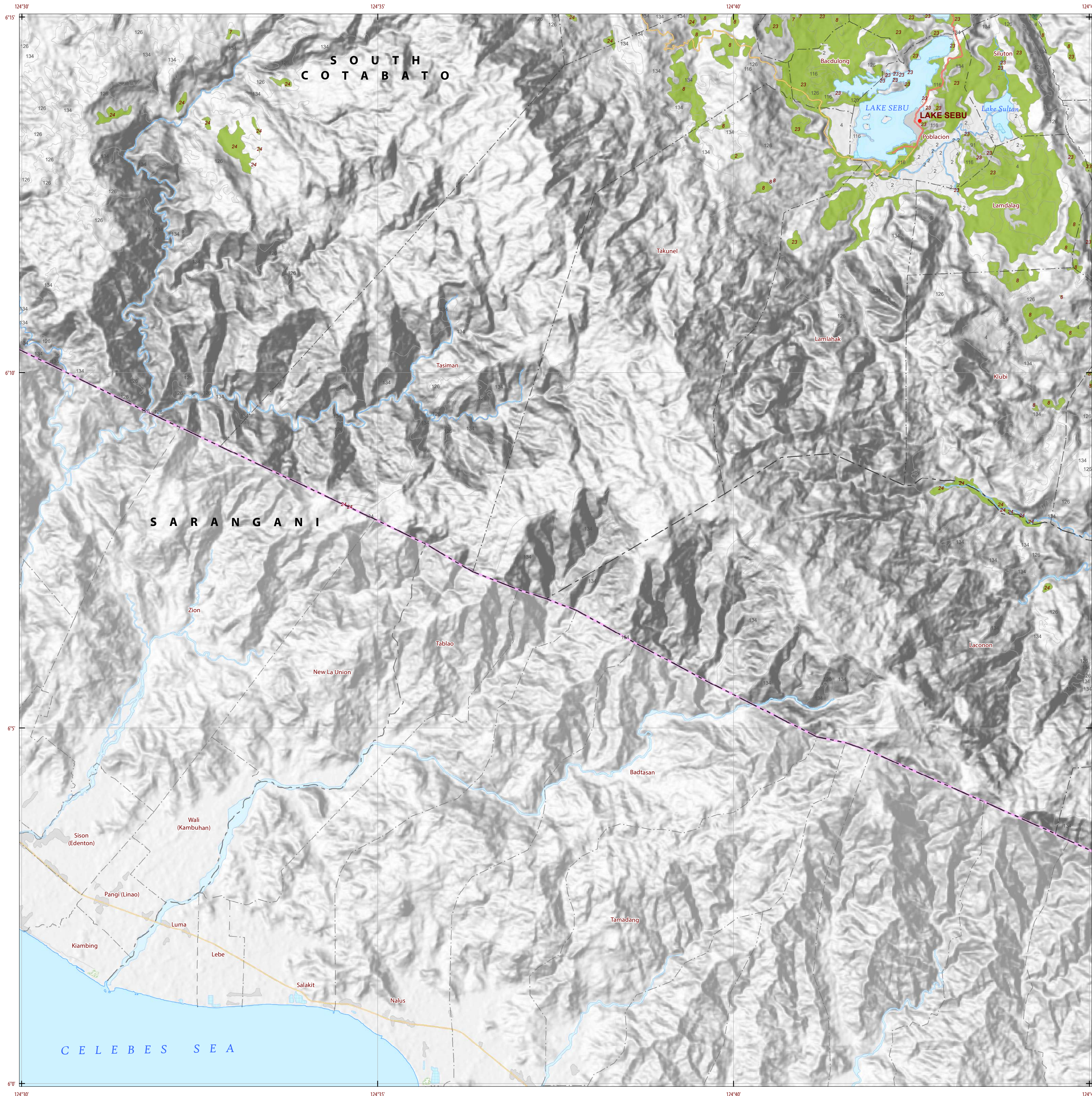
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LAND SUITABILITY MAP ABACA

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

Universal Transverse Mercator Zone 51 N, PRS 1992 Datum
DISCLAIMER: All political boundaries are not authoritative.

LEGEND

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- Cacao
- Land limitation
- Land use

CONVENTIONAL SIGNS

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LAND USE

- Built-up
- Fishpond
- Mangrove

ADJOINING SHEETS

3913-III

3813-I 3913-IV 3913-I
3813-II 3913-III 3913-II

INDEX MAP

MISCELLANEOUS INFORMATION

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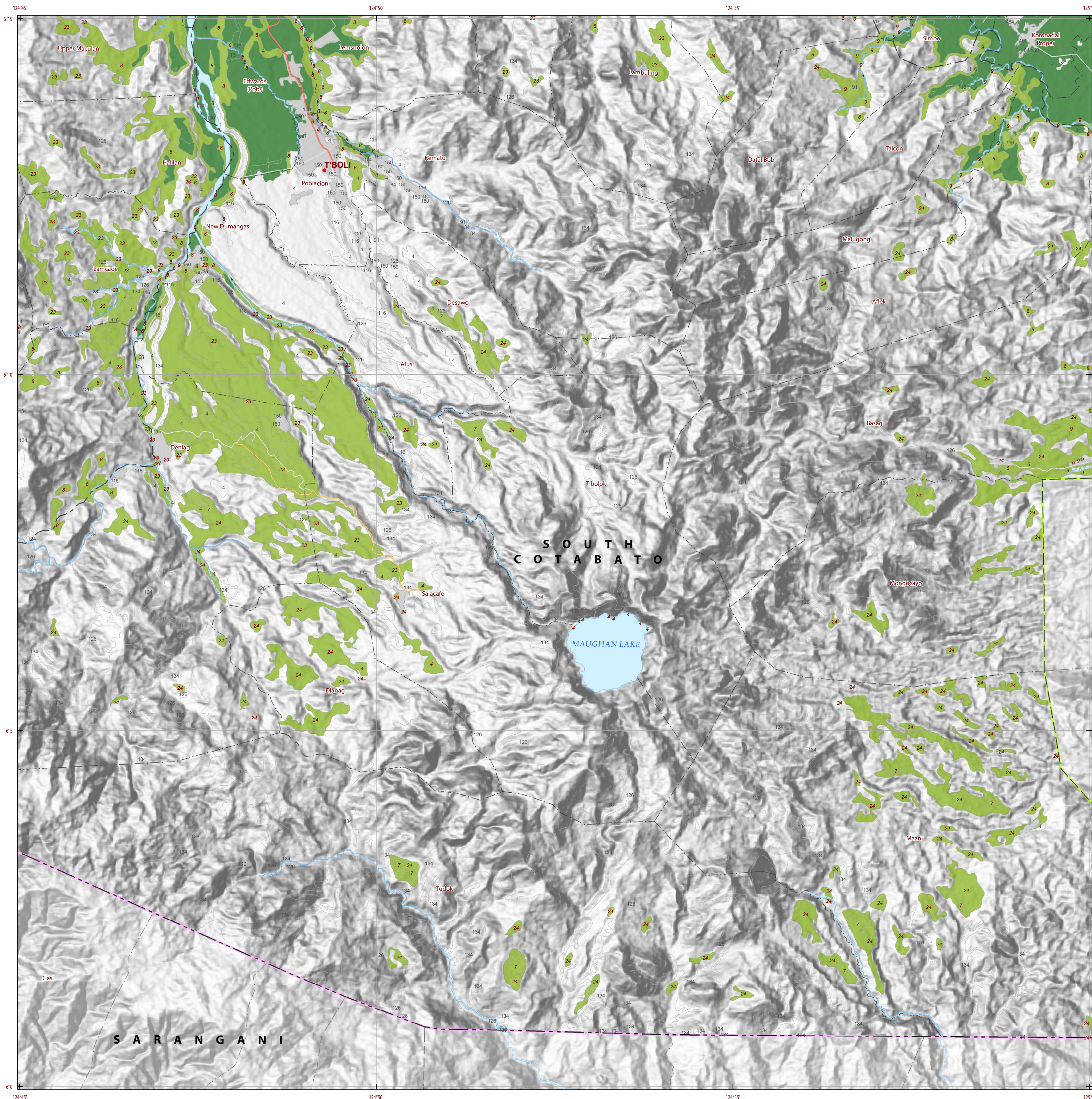
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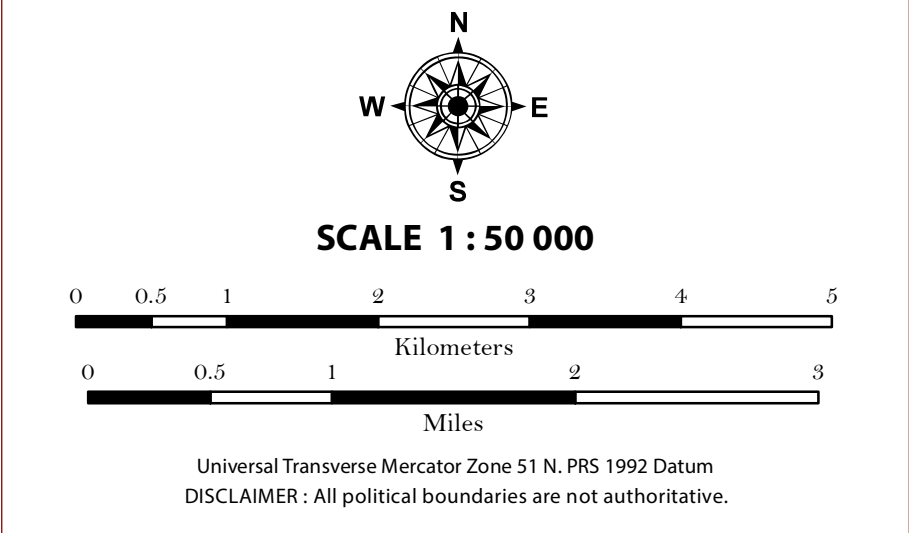
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PROVINCE OF SOUTH COTABATO Sheet 9 of 11 Sheet No. 3913-III



LAND SUITABILITY MAP ABACA

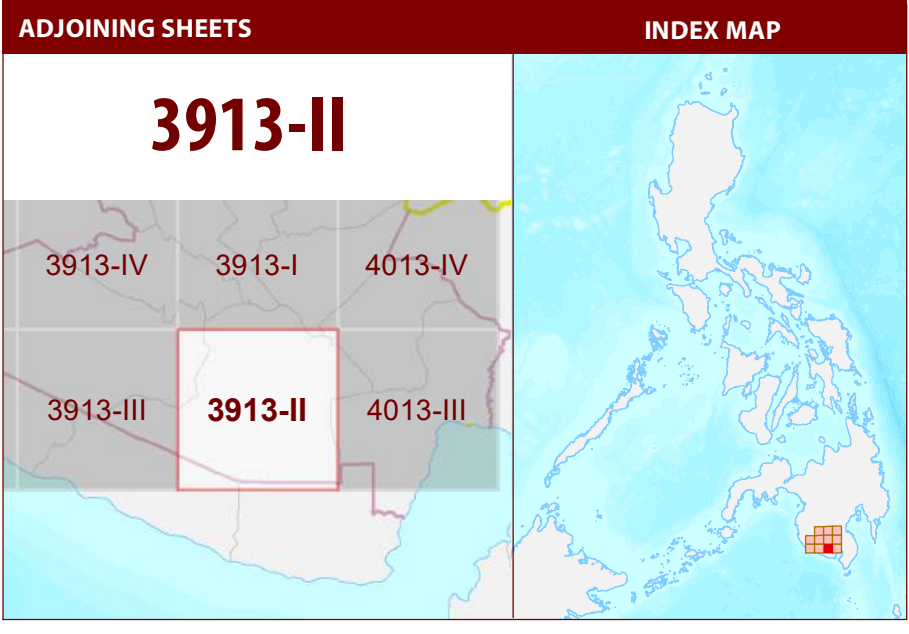
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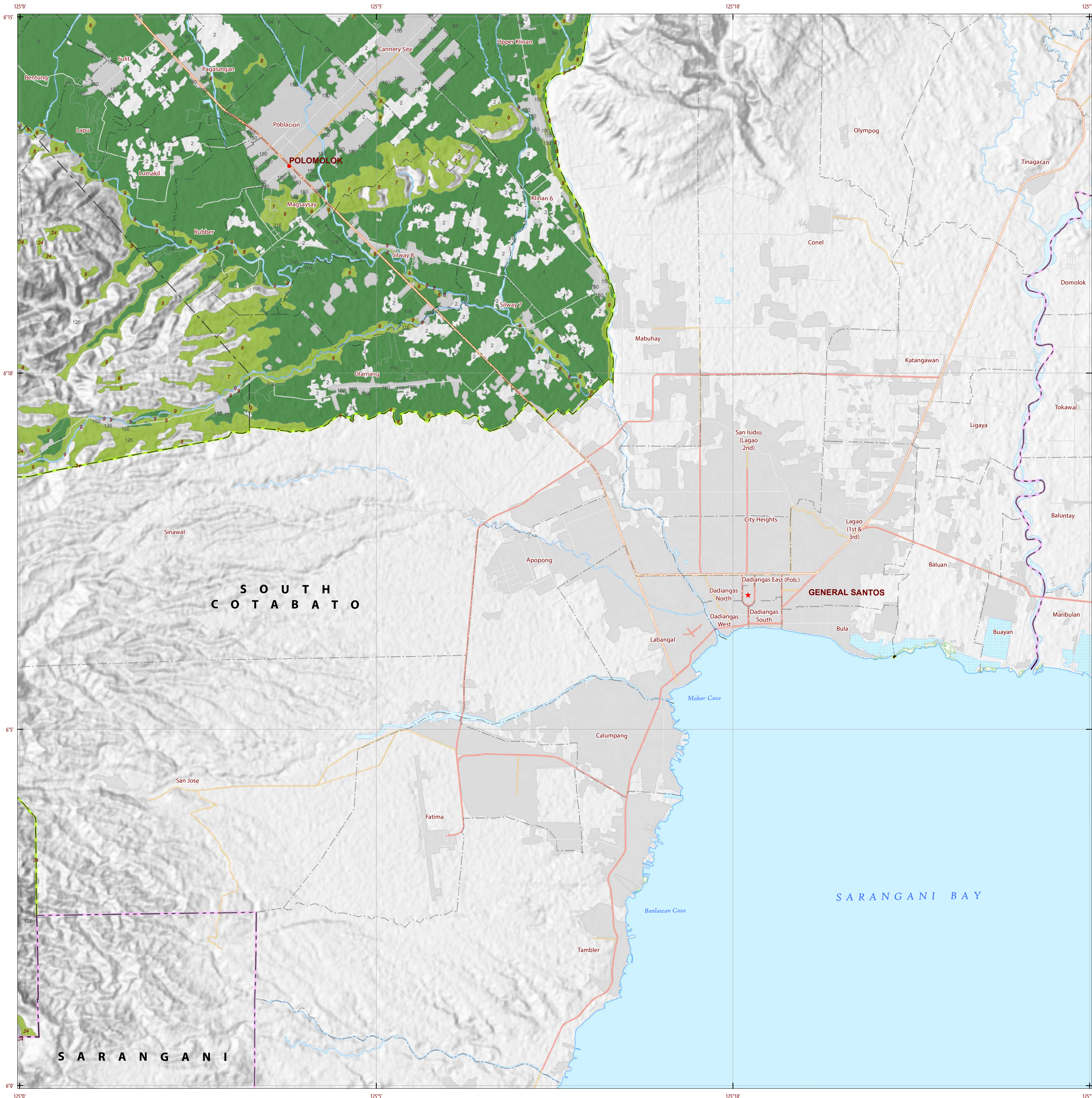
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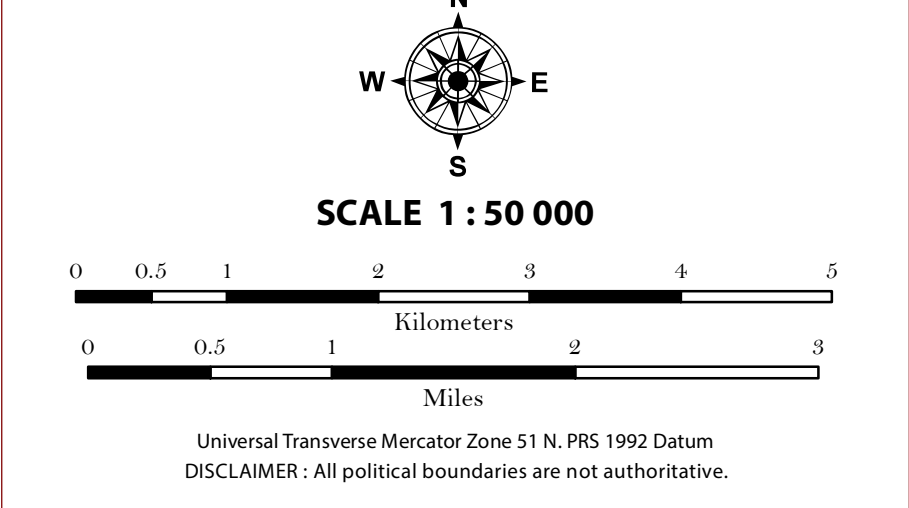
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LAND SUITABILITY MAP ABACA

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



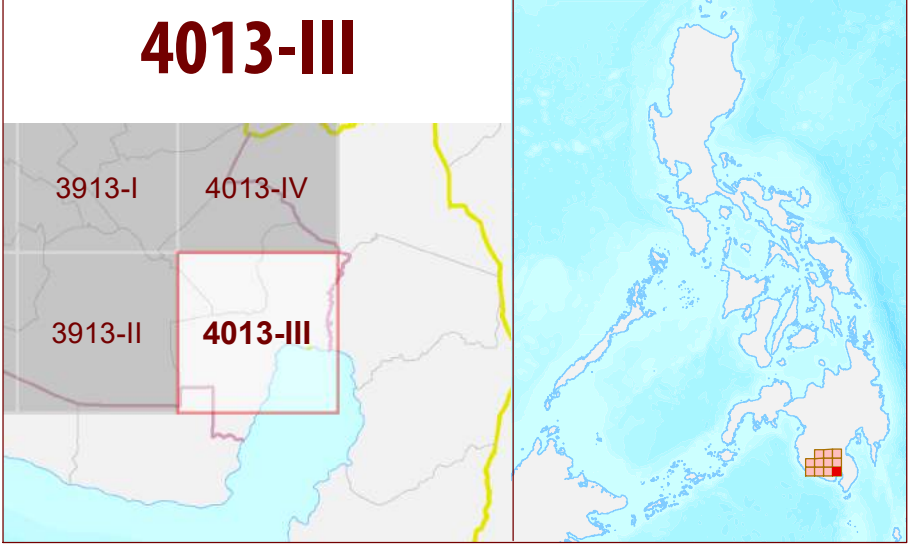
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 - District
 - Municipality
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ADJOINING SHEETS



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