

LAND SUITABILITY MAP

ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

ZAMBOANGA CITY



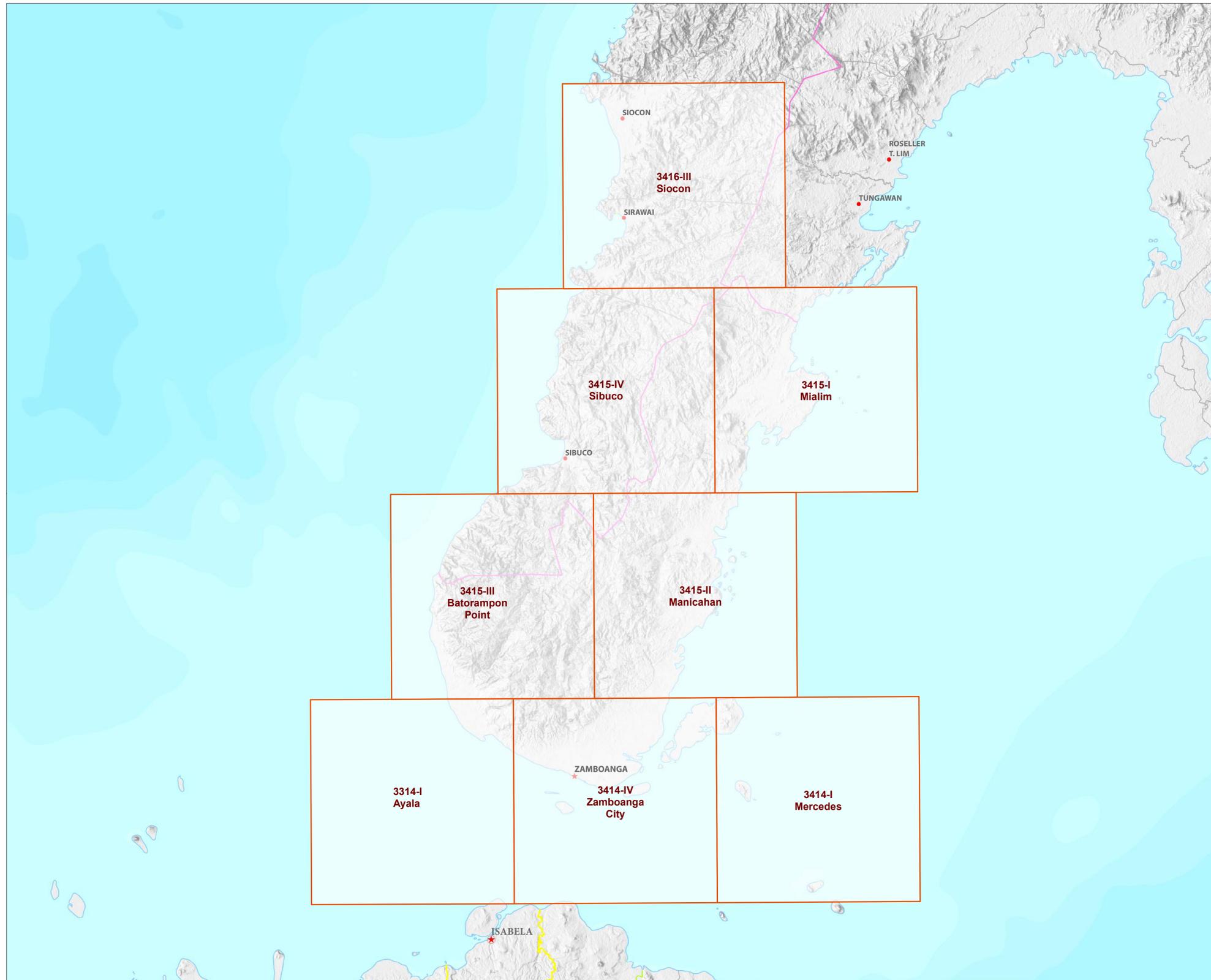
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DEPARTMENT OF AGRICULTURE
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LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

ZAMBOANGA CITY



LEGEND

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- ★ City
- Capital Town
- Town

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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 duly 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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LAND SUITABILITY MAP FOR ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS ZAMBOANGA CITY, REGION IX

EXTENT OF SUITABILITY FOR ROBUSTA, LIBERICA AND EXCELSA COFFEE PRODUCTION BY MUNICIPALITY

MUNICIPALITY	EXISTING ROBUSTA (Ha)			TOTAL EXISTING AREA (Ha)	EXPANSION AREA (Ha)						CONFLICT RESOLUTION AREA (Ha)						TOTAL POTENTIAL EXPANSION AREA (Ha)	
	S1	S2	S3		Coconut		Shrubland, unmanaged*		Grassland, unmanaged*		Corn		Paddy rice, non-irrigated		Other crops			
					S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2		
ZAMBOANGA CITY	-	-	-	-	17,783	4,663	3,742	721	10,589	1,863	3,208	657	-	-	-	-	8	43,234
TOTAL	-	-	-	-	17,783	4,663	3,742	721	10,589	1,863	3,208	657	-	-	-	-	8	43,234

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

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 ROBUSTA, LIBERICA AND EXCELSA 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
Coffee (Robusta, Excelsa, Liberica)	S1	<8	>100	CL, SiCL, SCL, SC, SIC, C, HC	WD, MWD	5.6 - 7.2	high	none-slight	none-slight	none-few	<1000	2001-4500	I, III, IV
	S2	8 - 30	30 - 100	FSL, L, SiL	SPD, PD	5.1 - 5.5 7.3 - 7.8	medium	moderate	moderate	common	1000-2000	1000-2000	I, II
	S3	>30	<30	S, LS, CSL, SL	VPD, ED	<5.0 -> 7.9	low	severe	severe	many	>2000	<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

EI2 - 1000m - 2000m
EI3 - > 2000m

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

CODE	LANDUSE
4	Corn
82	Cacao
105	Fruit trees, mixed
116	Coconut
126	Grassland
134	Shrubs, unmanaged
137	Rubber

CLIMATE TYPE

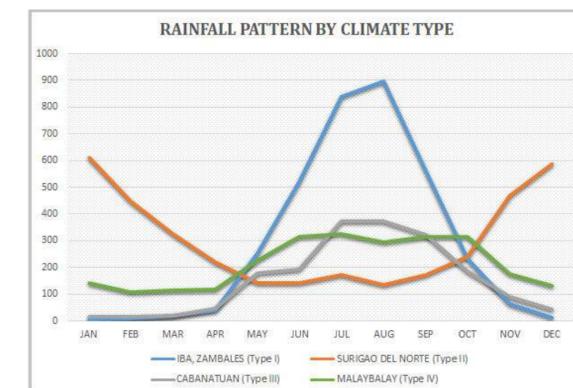
TYPE I : Two pronounced season, dry from November to April and wet during the rest of the year. Maximum rain period is from June to September

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.

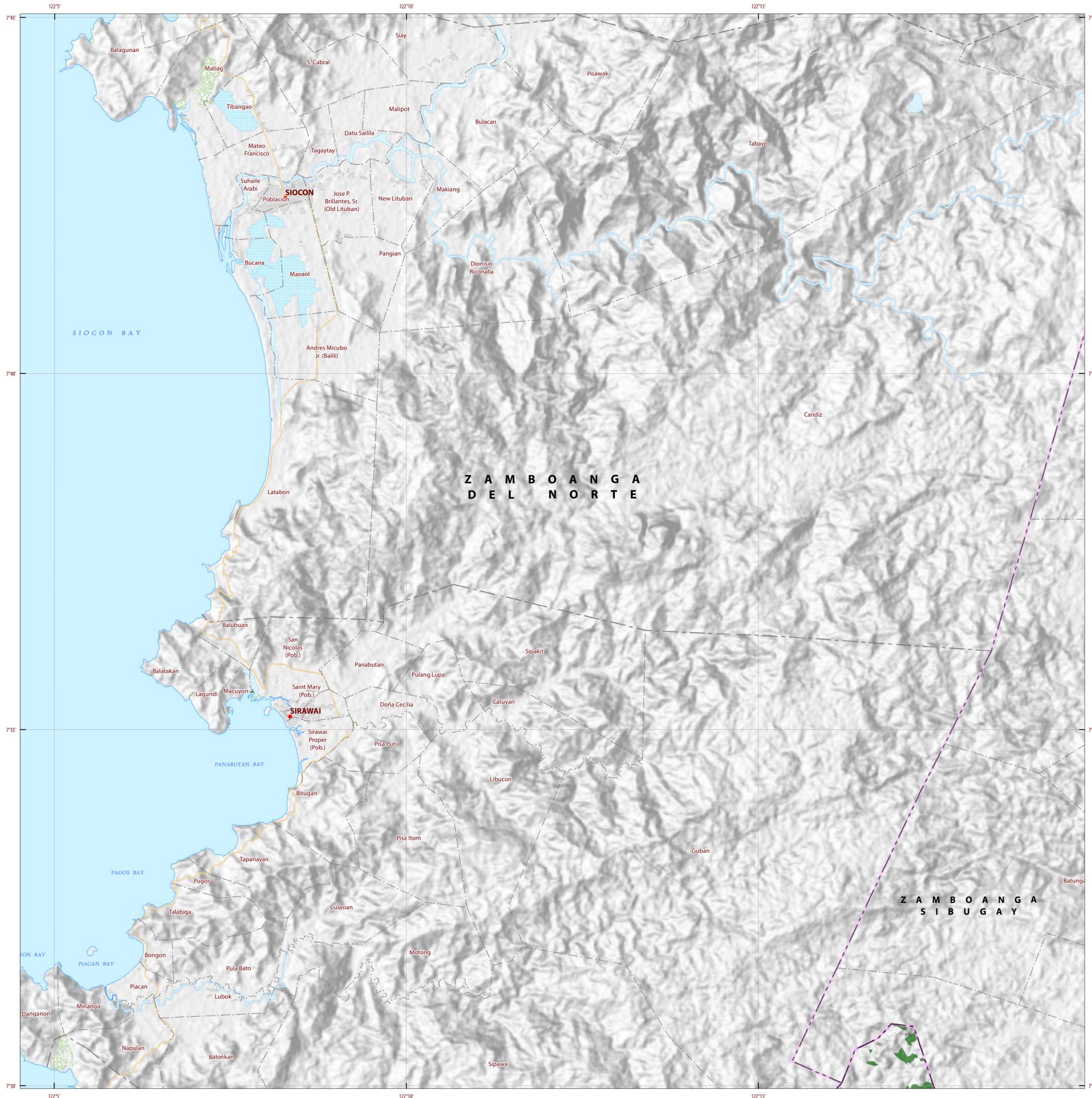
TYPE III : No very pronounced maximum rain period, with a dry season lasting only from one to three months, either during the period from December to February or from March to May. This type resembles Type I since it has a short dry season.

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

Whole part of Zamboanga City is classified as climatic Type III.

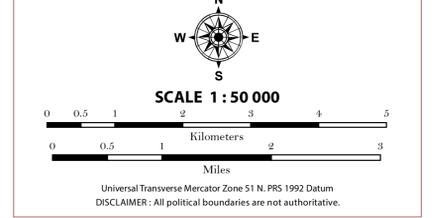


Source: PAGASA 2018, *Climatological Normals (Rainfall)*, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, <<https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>>.



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LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



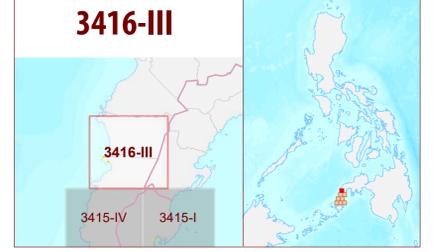
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 - S3 Marginally Suitable** - Land having limitations which in aggregate are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified.
- Not Suitable/ Not Relevant**
- OTHER SIGNS**
- NGP Areas
 - Cacao
 - Land limitation
 - Land use

CONVENTIONAL SIGNS

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

ADJOINING SHEETS



MISCELLANEOUS INFORMATION

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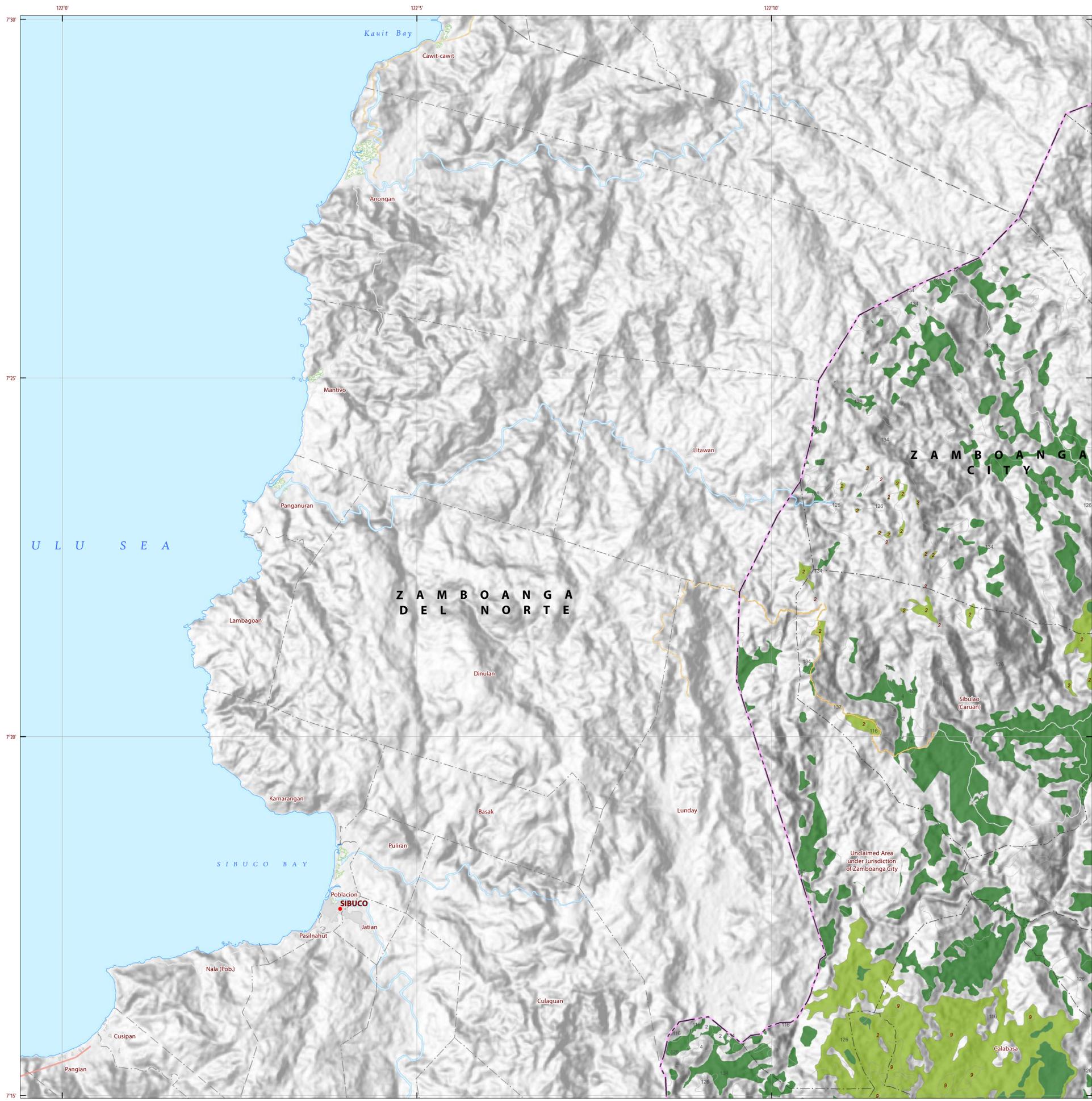
Project Leader : BERNARDO B. PASCUA
 GIS and Cartography : IRWIN K. SAMALCA

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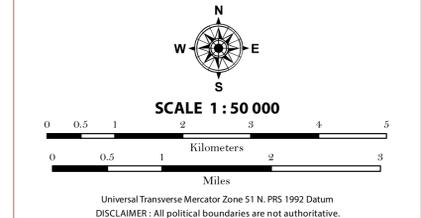
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LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



LEGEND

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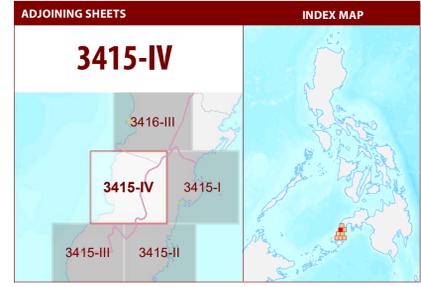
- NGP Areas
- Cacao
- Land limitation
- Land use

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



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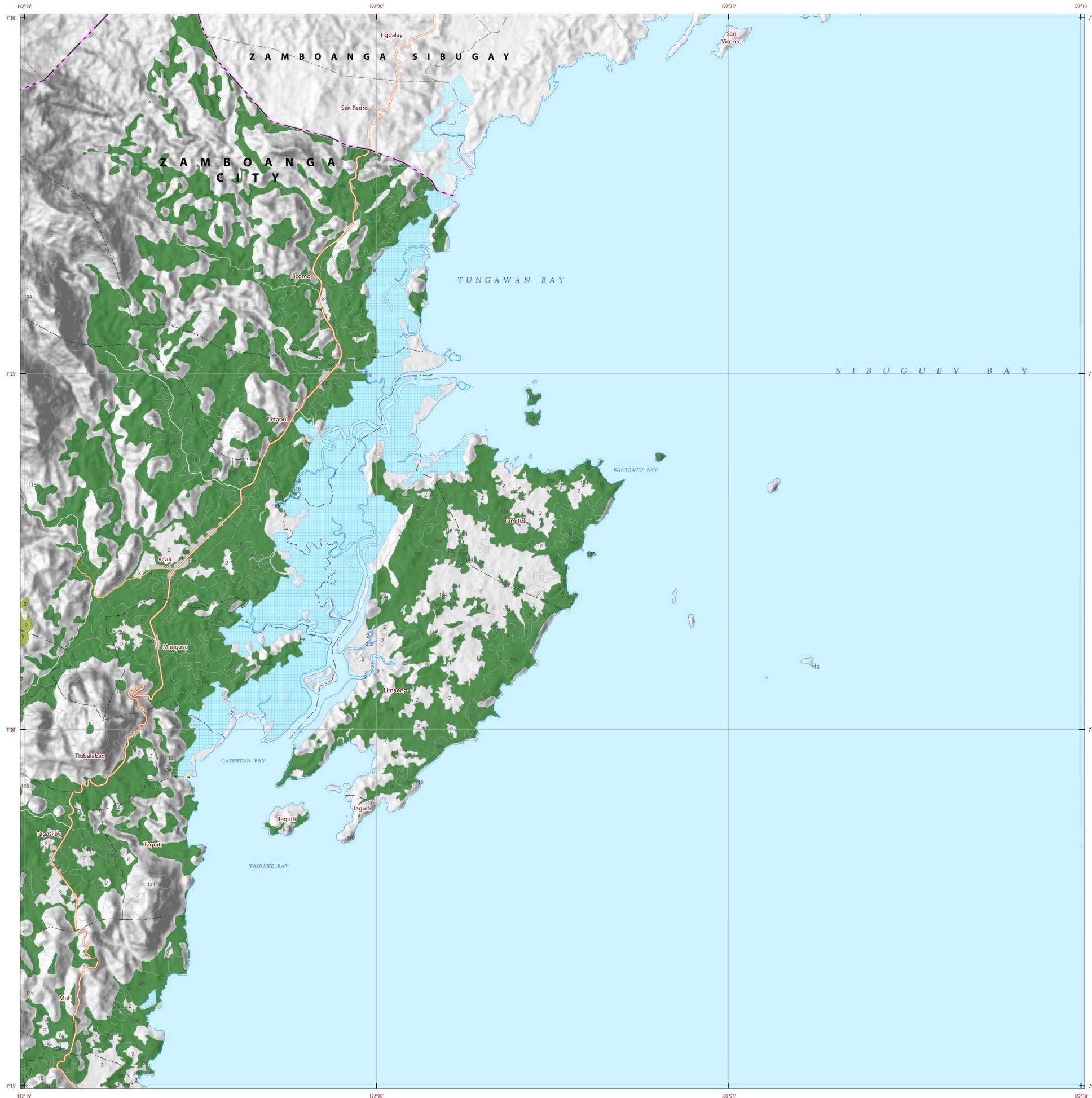
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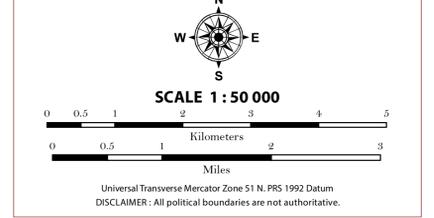
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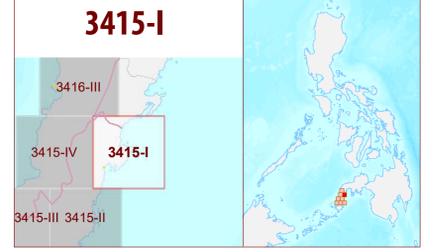
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- OTHER SIGNS**
- NGP Areas
 - Cacao
 - Land limitation
 - Land use

CONVENTIONAL SIGNS

- ROADS**
- Expressway
 - Trunk line
 - Primary
 - Secondary
 - Tertiary
- BOUNDARY**
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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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OTHER SIGNS

- NGP Areas
- Cacao
- Land limitation
- Land use

CONVENTIONAL SIGNS

<p>ROADS</p> <ul style="list-style-type: none"> Expressway Trunk line Primary Secondary Tertiary <p>LAND USE</p> <ul style="list-style-type: none"> Built-up Fishpond Mangrove 	<p>BOUNDARY</p> <ul style="list-style-type: none"> Region Province District Municipality Barangay 	<p>HYDROLOGY</p> <ul style="list-style-type: none"> Sea / Shoreline Lakes / Rivers <p>PLACES</p> <ul style="list-style-type: none"> Capital City / City Capital Town / Town
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<h4 style="background-color: #800000; color: white; margin: 0;">ADJOINING SHEETS</h4> <div style="text-align: center; font-size: large; font-weight: bold; margin-bottom: 10px;">3415-III</div>	<h4 style="background-color: #800000; color: white; margin: 0;">INDEX MAP</h4>
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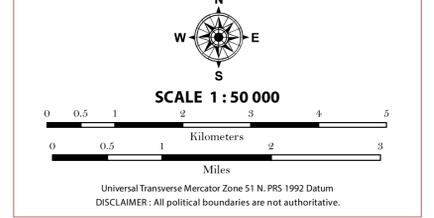
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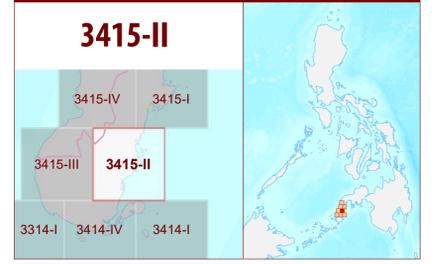
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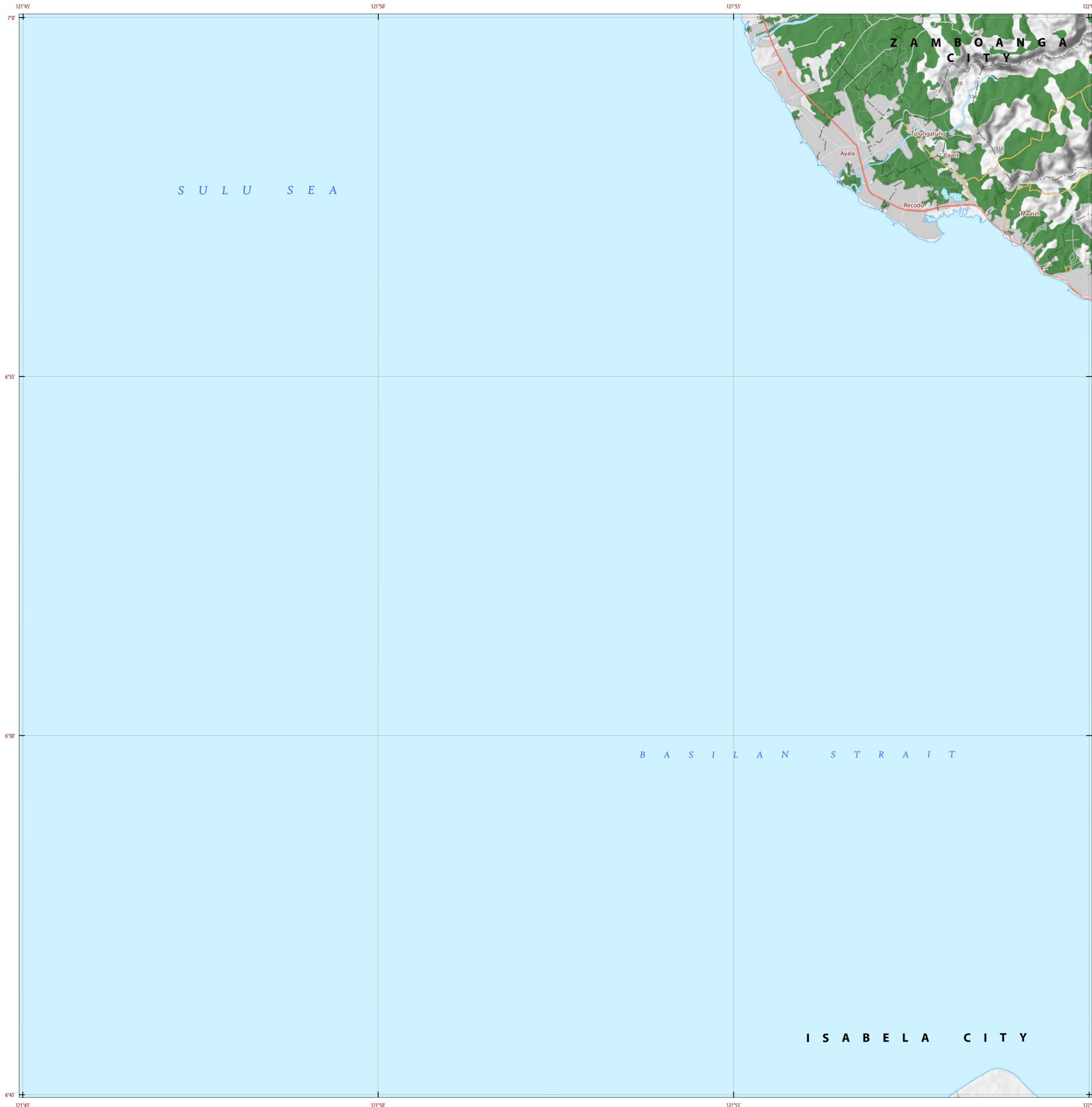
Project Leader : BERNARDO B. PASCUA
GIS and Cartography : IRWIN K. SAMALCA

Funding Agency : Department of Agriculture - Bureau of Agricultural Research (DA-BAR)
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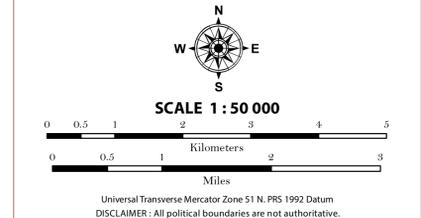
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LAND SUITABILITY MAP ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS



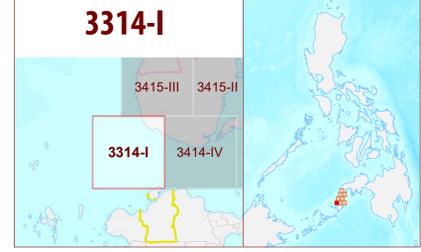
LEGEND

- 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 |

ADJOINING SHEETS



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LAND SUITABILITY MAP ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY
ASSESSMENT OF STRATEGIC PRODUCTION AREAS

N
W E
S

SCALE 1 : 50 000

0 0.5 1 2 3 4 5
Kilometers

0 0.5 1 2 3
Miles

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
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- 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

3414-IV

3415-III 3415-II

3314-I 3414-I

INDEX MAP

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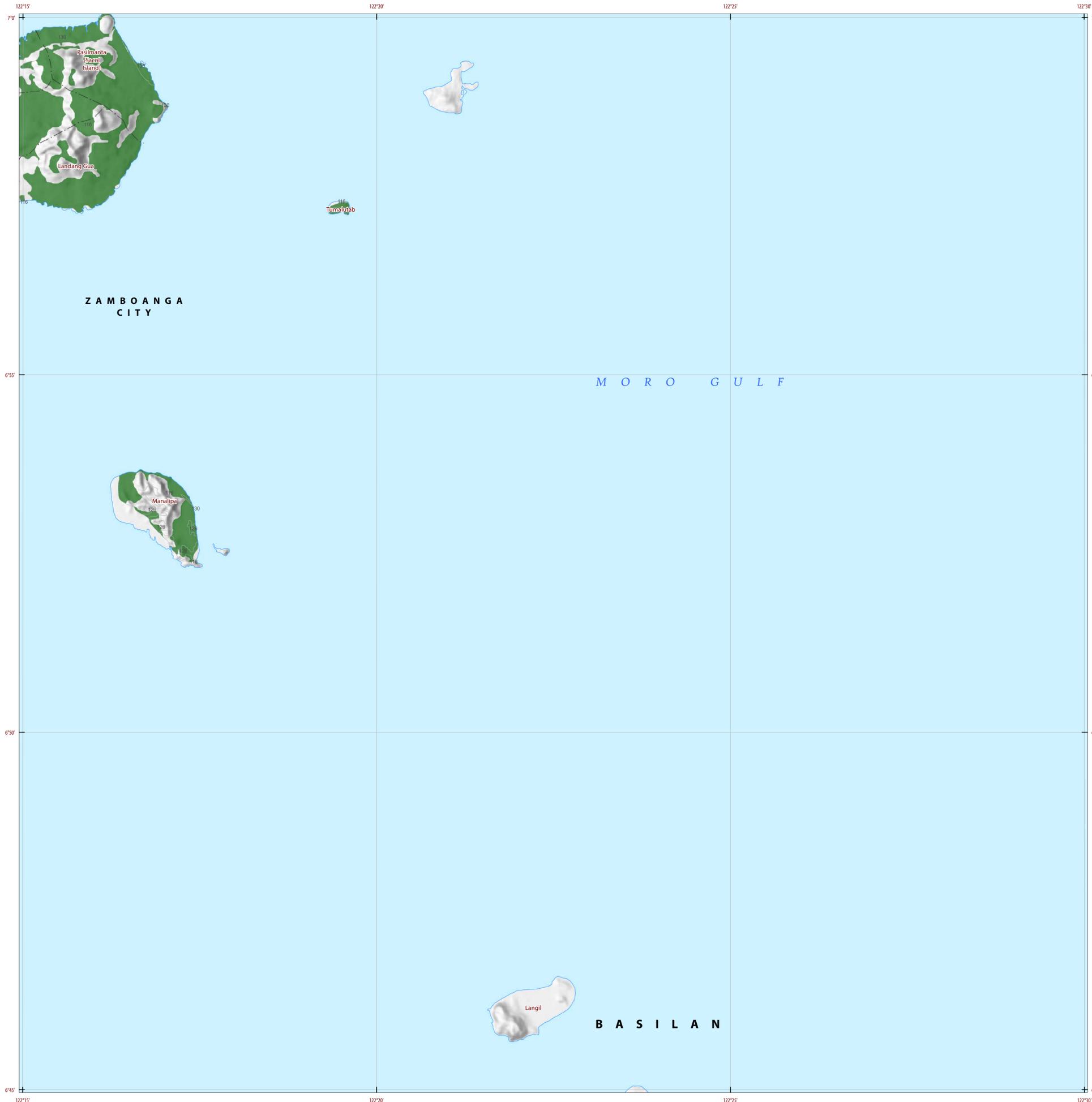
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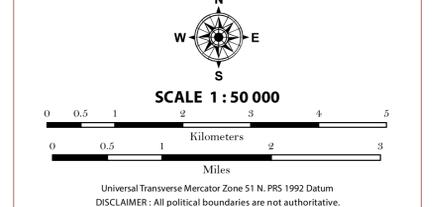
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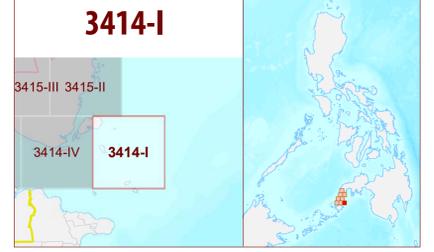
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