LAND SUITABILITY MAP

ARABICA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

PROVINCE OF DAVAO OCCIDENTAL

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

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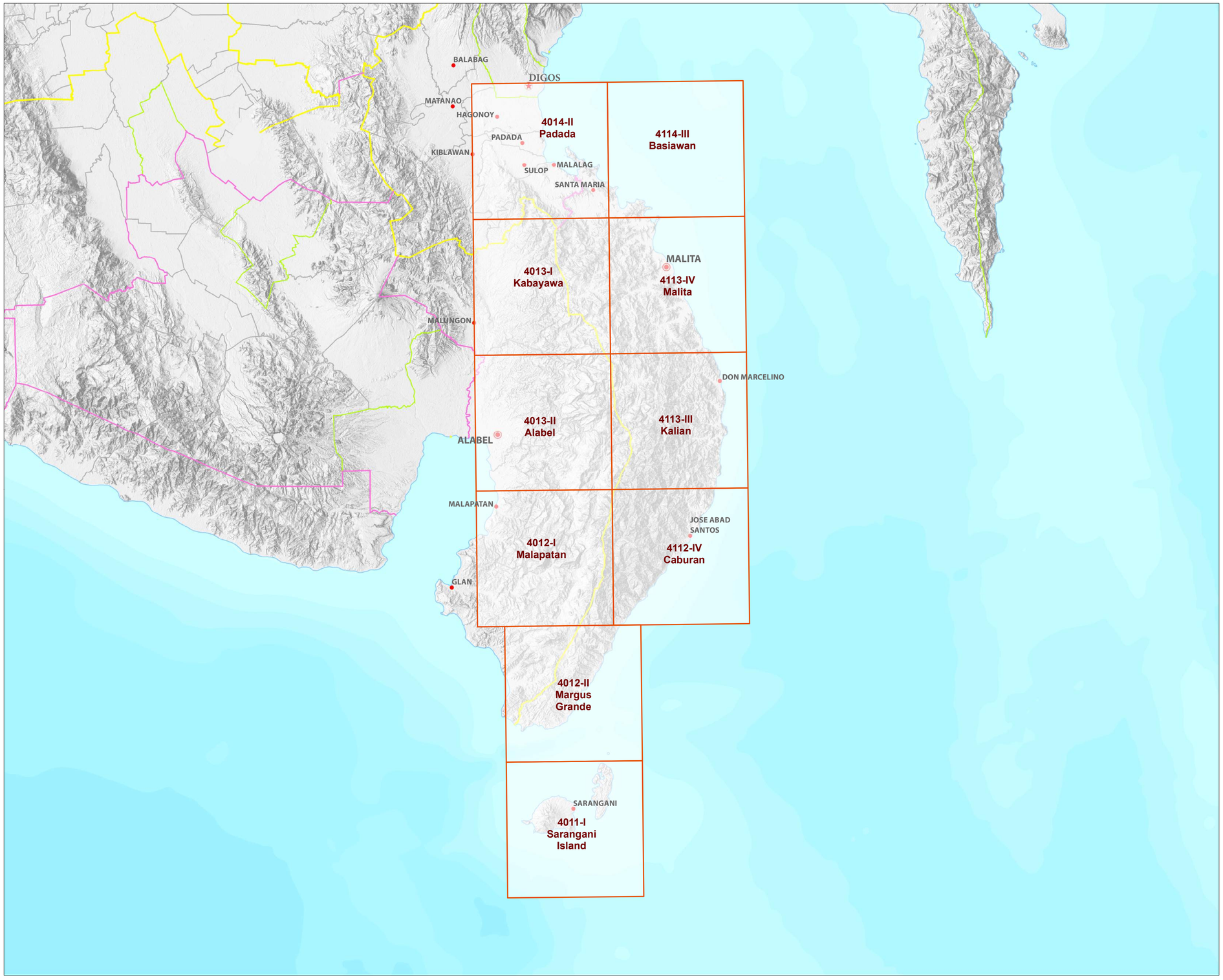
PROVINCE OF DAVAO OCCIDENTAL



LEGEND

Places

- Capital City
- City
- Capital Town
- Town

Administrative Boundary

- Regional
- Provincial
- City
- Municipal

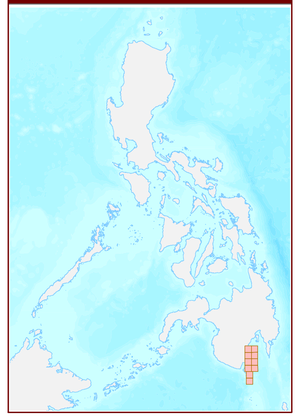
Map Index

- Index grid

Topographic Relief

Bathymetry

LOCATION MAP



MISCELLANEOUS INFORMATION

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LAND SUITABILITY MAP FOR ARABICA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

DAVAO OCCIDENTAL, REGION XI

EXTENT OF SUITABILITY FOR ARABICA COFFEE PRODUCTION BY MUNICIPALITY

MUNICIPALITY	EXISTING COFFEE (Ha)			TOTAL EXISTING AREA (Ha)	EXPANSION AREA (Ha)						CONFLICT RESOLUTION AREA (Ha)						TOTAL POTENTIAL EXPANSION AREA (Ha)
					Coconut		Shrubland, unmanaged*		Grassland, unmanaged*		Corn		Paddy rice, non-irrigated		Other crops		
	S1	S2	S3		S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	
DON MARCELINO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JOSE ABAD SANTOS	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
MALITA	-	-	-	-	-	33	-	-	-	613	-	-	-	-	-	-	646
SANTA MARIA	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	7
SARANGANI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	33	-	4	-	620	-	-	-	-	-	-	**657**

Note: Delivery of arabica coffee planting materials must be started on the onset of rainy season.
**establishment of shade trees prior to planting of arabica 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 ARABICA 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 (Arabica)	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
	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 (%)
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 DEPTH (cm)
0 - 30 - very shallow
30 - 50 - shallow
50 - 100 - moderately deep
> 100 - deep to very deep

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

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

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

CLIMATE TYPE

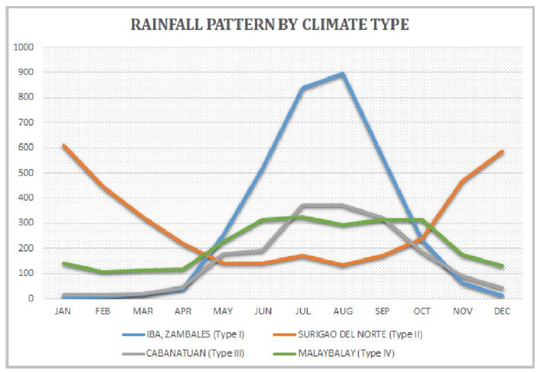
TYPE I : Two pronouced season, dry from November to April and wet during the rest of the year. Maximum rain period is from June to September

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.

Davao Occidental is classified as climatic 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 LIMITATIONS DESCRIPTION AND COMBINATIONS

ELEVATION
El2 - 500 - 1000m or 2000 - 2500m
El3 - < 500m or > 2500m

SLOPE/TOPOGRAPHY
T2 - Undulating to moderately steep
T3 - Steep to very steep

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

SOIL TEXTURE
Tc - Coarse texture

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

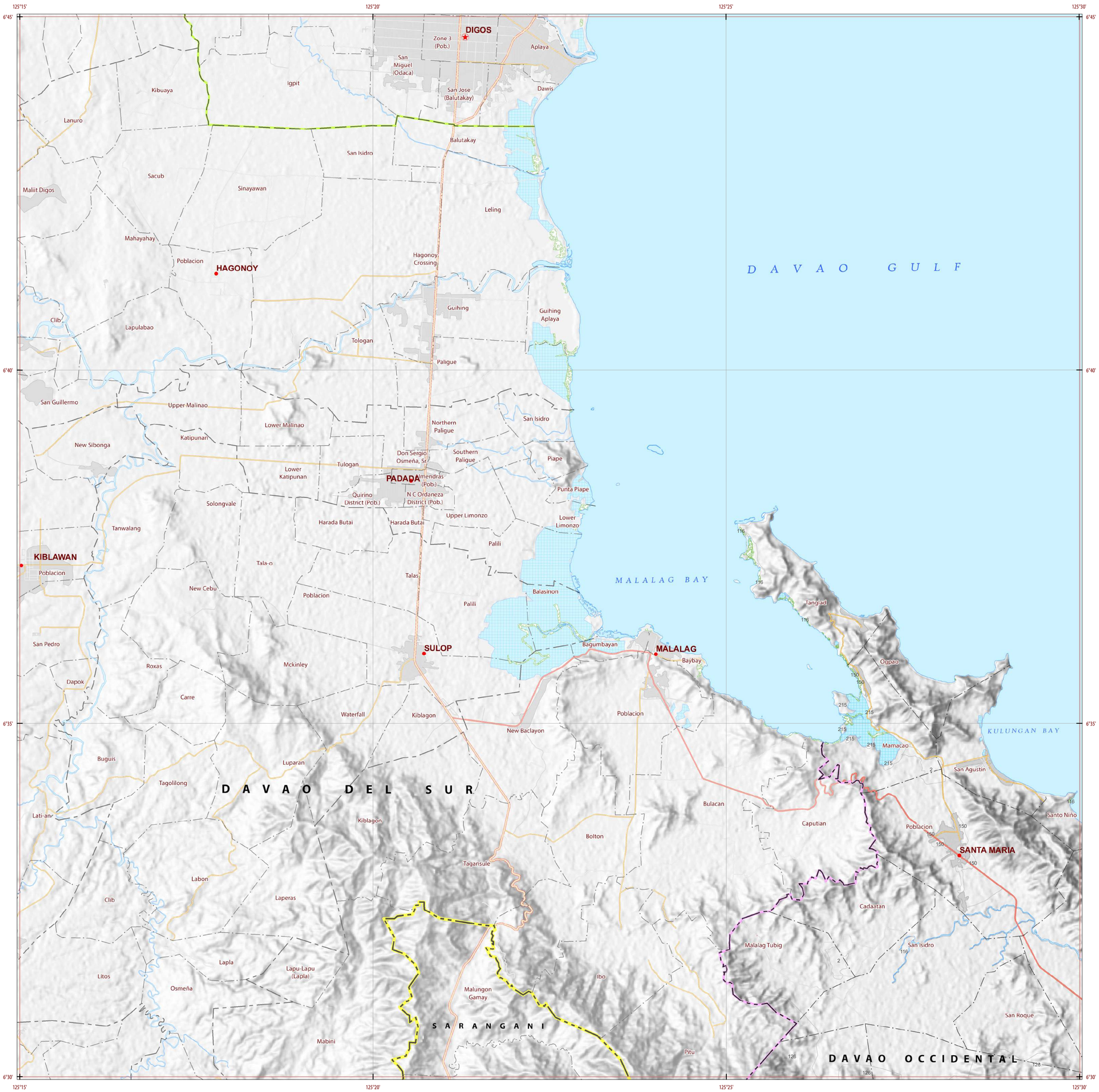
ROCK OUTCROPS
Rc2 - Common
Rc3 - Many

SOIL EROSION
E2 - Moderate erosion
E3 - Severe erosion

FLOODING
F2 - Moderate seasonal flooding
F3 - Severe seasonal flooding

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

CODE	LANDUSE
4	Corn
34	Diversified crops
85	Mango
89	Durian
91	Banana
107	Abaca
116	Coconut
126	Grassland
134	Shrubs, unmanaged
137	Rubber (T)



LAND SUITABILITY MAP ARABICA 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
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LEGEND

SUITABILITY CLASSES

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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
1 Land limitation
118 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

4014-II

4014-II
4114-III
4013-I
4113-IV

INDEX MAP

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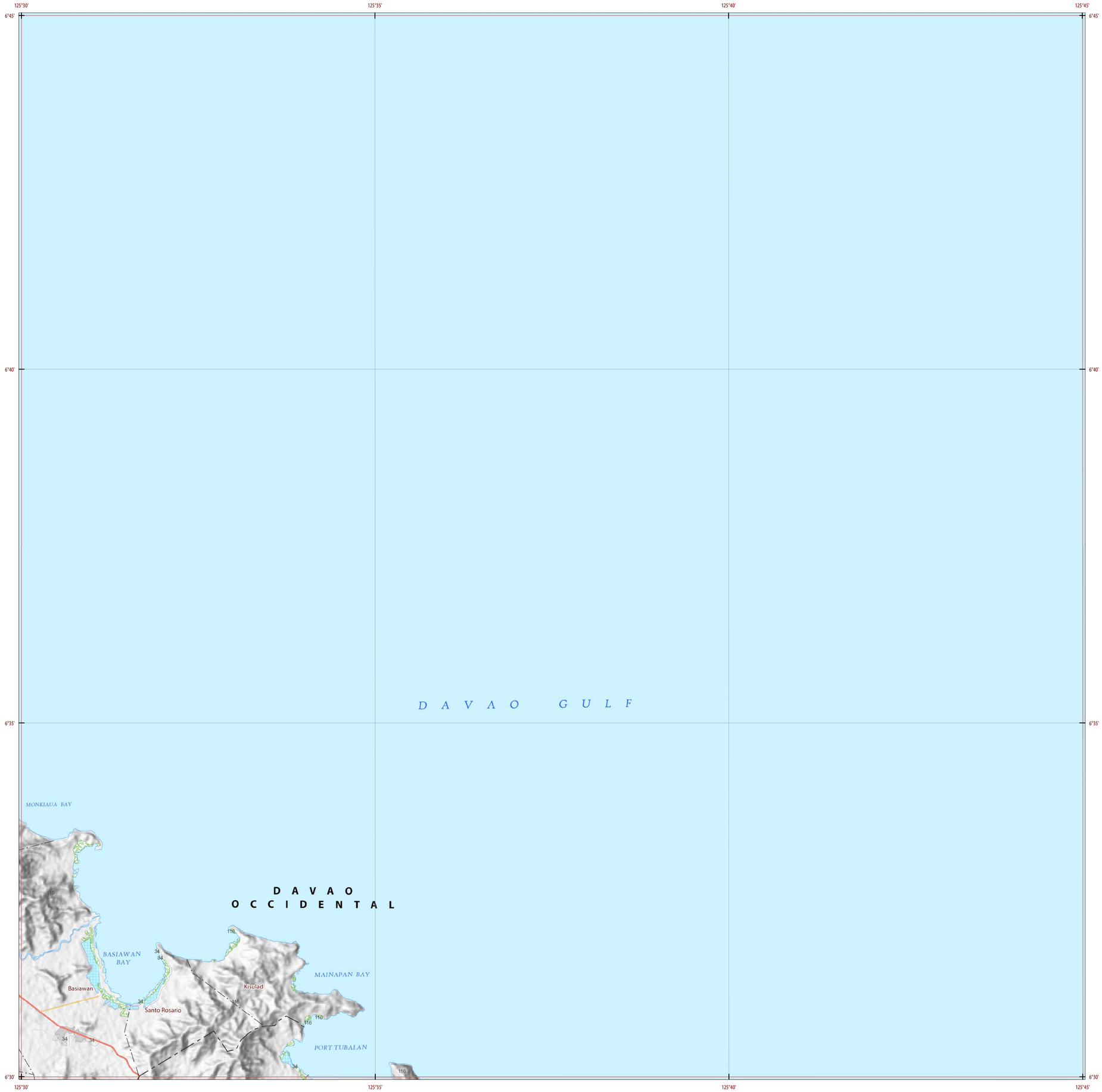

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Not Suitable/ Not Relevant

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LAND USE
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4114-III

4014-II | 4114-III
4013-I | 4113-IV

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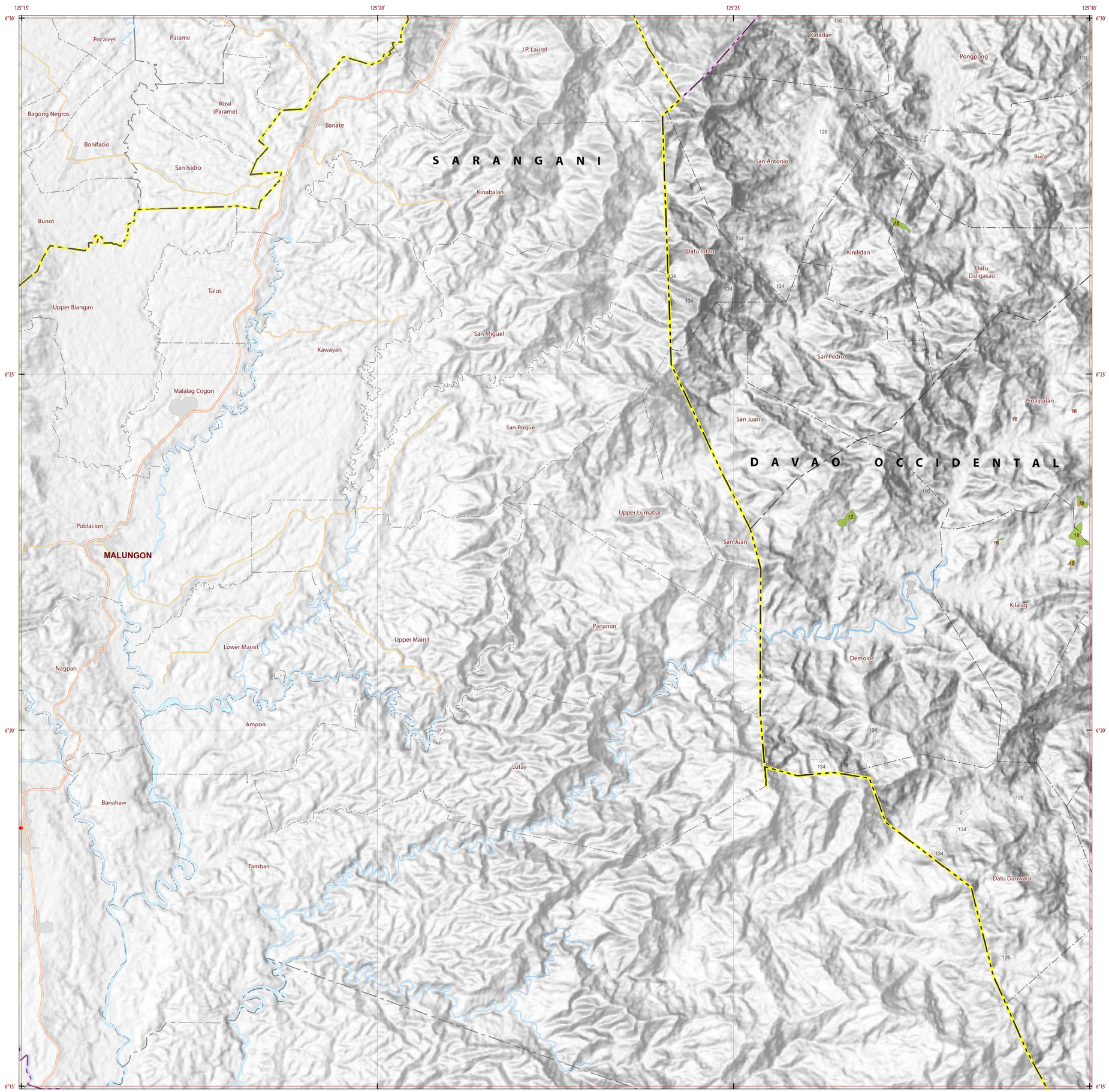

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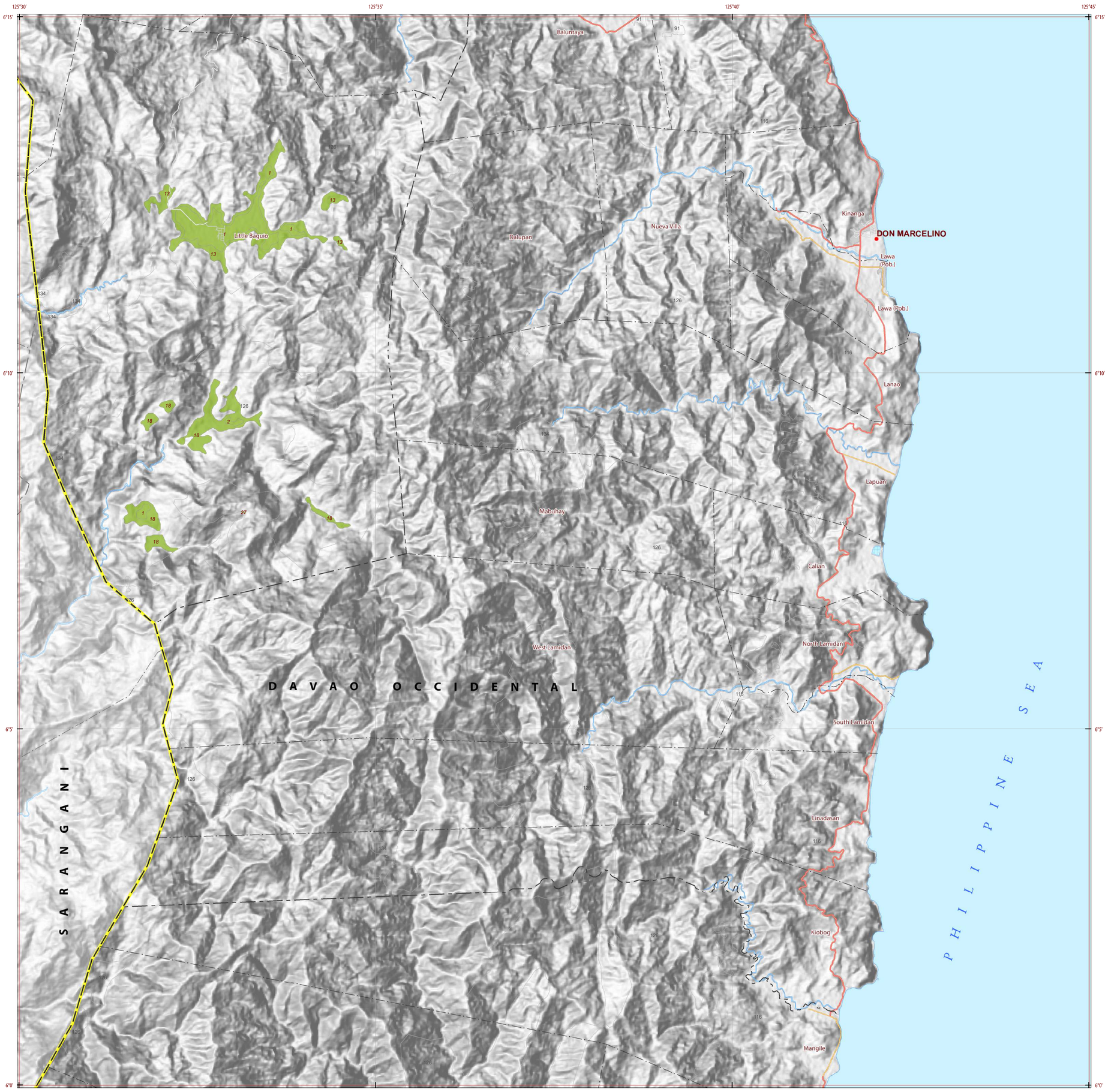

LAND SUITABILITY MAP ARABICA COFFEE

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

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
1 Land limitation
116 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

4113-III

4013-I | 4113-IV
4013-II | 4113-III
4012-I | 4112-IV

INDEX MAP

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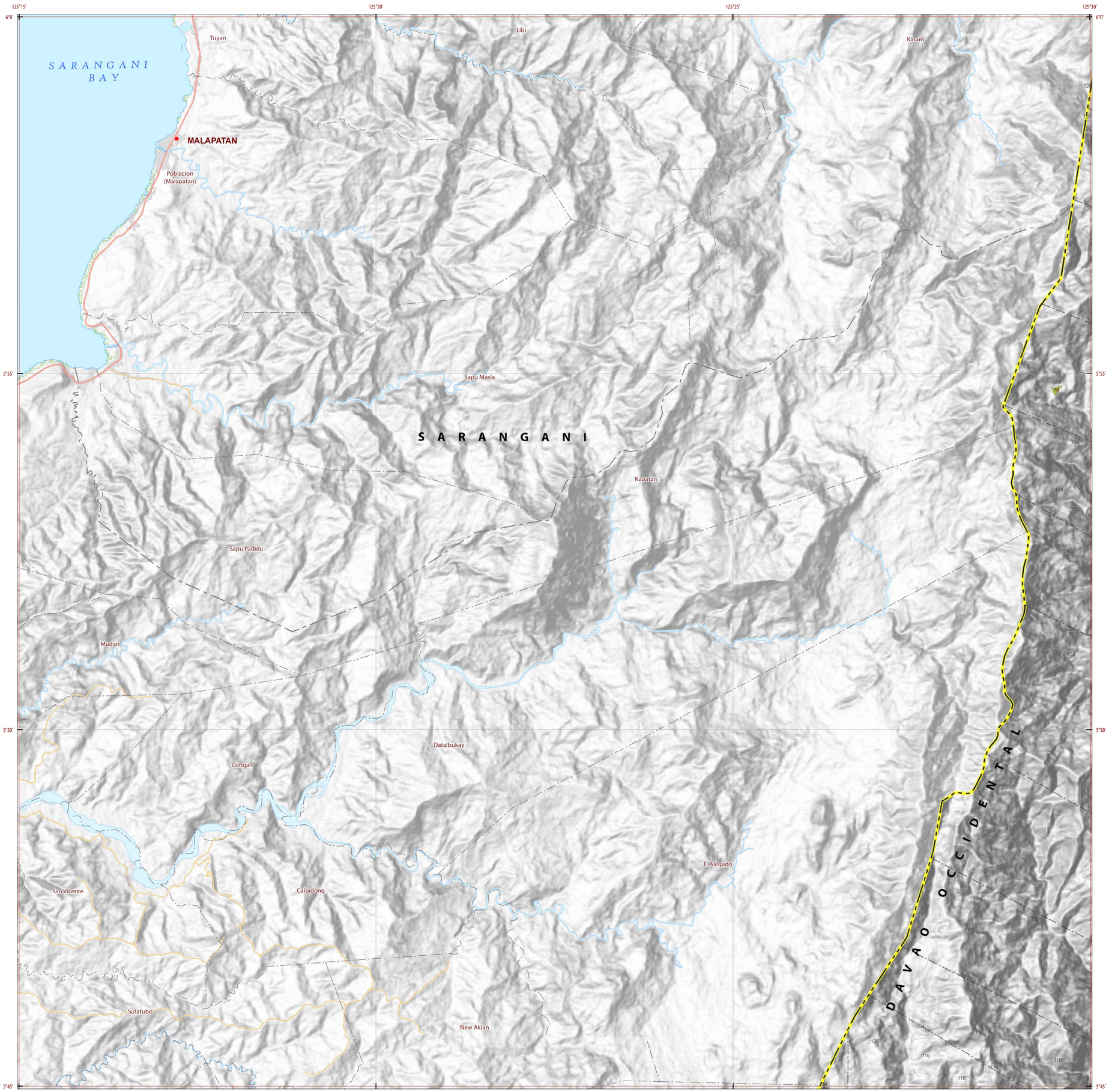

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N
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Kilometers

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116 Land use

CONVENTIONAL SIGNS

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Trunk line
Primary
Secondary
Tertiary

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Mangrove

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4012-I

4013-II 4113-III
4012-I 4112-IV
4012-II

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4013-II 4113-III
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