

LAND SUITABILITY MAP

CACAO

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

COTABATO CITY

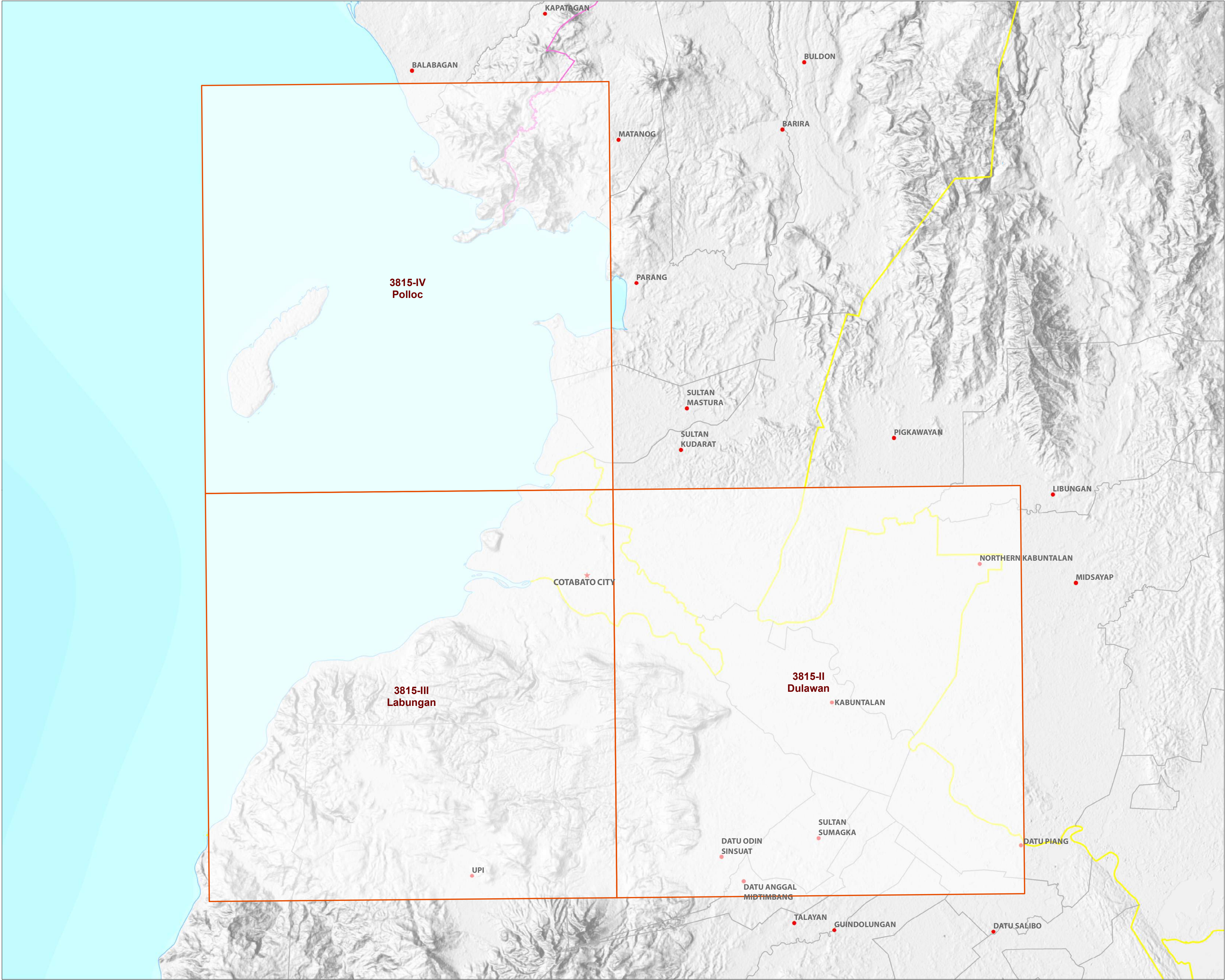


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MAP INDEX

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS COTABATO CITY



LEGEND

Places

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

Administrative Boundary

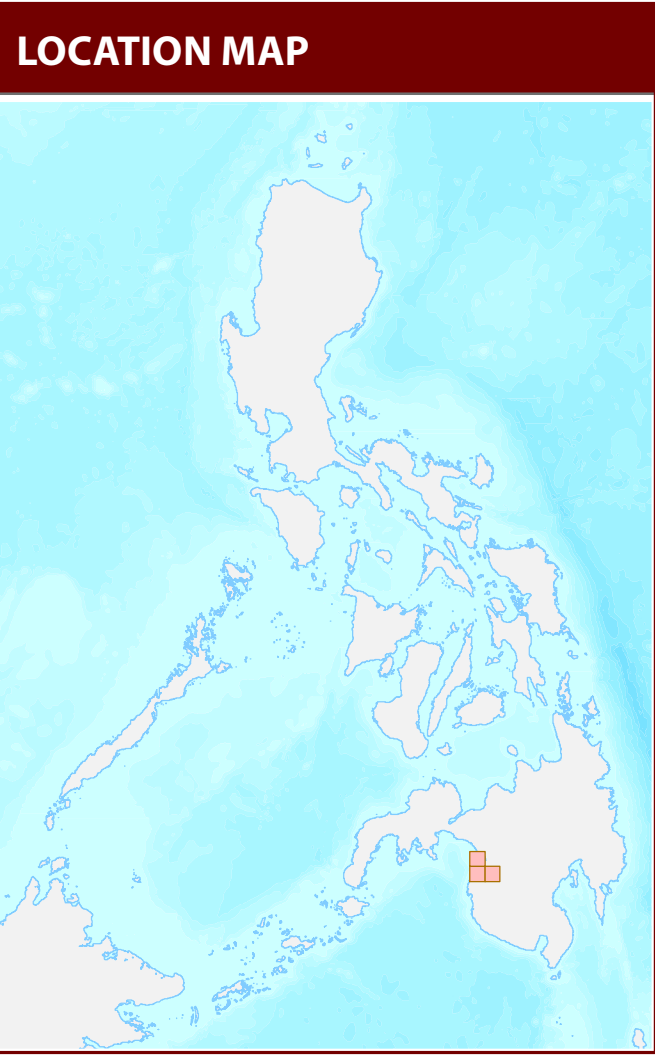
- Regional
- Provincial
- City
- Municipal

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** 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 CACAO

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

EXTENT OF SUITABILITY FOR CACAO PRODUCTION BY MUNICIPALITY

MUNICIPALITY	EXISTING CACAO (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			
COTABATO CITY	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
TOTAL	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4

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

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 CACAO 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
Cacao	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	50 - 100	FSL, L, SiL	SPD,PD	5.1 - 5.5 7.3 - 7.8	medium	moderate	moderate	common	1000-1500	1000-2000	I, II
	S3	>30	<50	S, LS, CSL, SL	VPD,ED	<5.0 - > 7.9	low	severe	severe	many	>1500	<1000 >4500	

SLOPE (%)		SOIL DRAINAGE		SOIL REACTION (pH)		SOIL TEXTURE		Fine	
0 - 3	- level to gently sloping	ED	- excessively drained	< 4.5	- extremely acid	Coarse		SC	- sandy clay
3 - 8	- gently sloping to undulating	WD	- well drained	4.5 - 5.0	- very strongly acid	S	- sand	SiC	- silty clay
8 - 18	- undulating to rolling	MWD	- moderately well drained	5.1 - 5.5	- strongly acid	LS	- loamy sand	C	- clay
18 - 30	- rolling to moderately steep	SPD	- somewhat poorly drained	5.6 - 6.0	- medium acid	CSL	- coarse sandy loam	HC	- heavy clay
30 - 50	- steep	PD	- poorly drained	6.1 - 6.5	- slightly acid	SL	- sandy loam		
> 50	- very steep	VPD	- very poorly drained	6.6 - 7.2	- neutral	Medium			
				7.3 - 7.8	- mildly alkaline	FSL	- fine sandy loam		
				7.9 - 8.4	- moderately alkaline	L	- loam		
				> 8.5	- strongly alkaline	SiL	- silt loam		
						CL	- clay loam		
						SiCL	- silty clay loam		
						SCL	- sandy clay loam		

LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

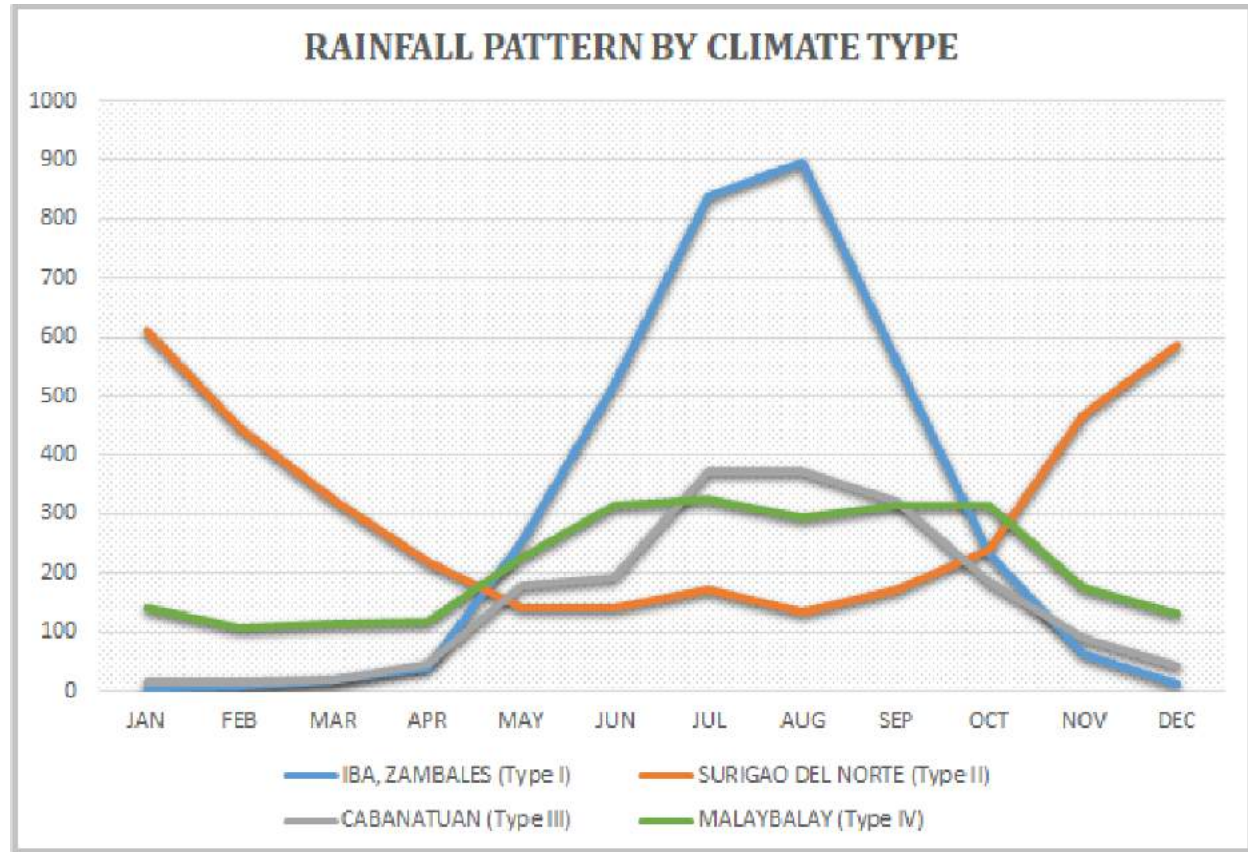
ELEVATION		SOIL DRAINAGE		SOIL DEPTH		SOIL EROSION	
E12	- 1000m - 1500m	D2	- Somewhat poorly drained to poorly drained	Sh2	- Moderately deep (50 - 100cm)	E2	- Moderate erosion
E13	- > 1500m	D3	- Very poorly drained or excessively drained	Sh3	- Very shallow to shallow (< 50cm)	E3	- Severe erosion
SLOPE/TOPOGRAPHY		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	LANDUSE
1	F2-D2	11	T3-E13	116	Coconut
2	F2-Tc			134	Shrubs, unmanaged
3	F3-D2				
4	T2				
5	T2-F2-D2				
6	T2-F3-D2				
7	T3				
8	T3-F2-D2				
9	T3-F3-D2				
10	T3-F3-D2				

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.

Western part of Cotabato City is classified as climatic Type IV and Eastern part is Type III.

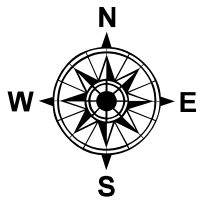


Source: PAGASA 2018, *Climatological Normals (Rainfall)*, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, <<https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>>.



LAND SUITABILITY MAP CACAO

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

SUITABILITY CLASSES

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- 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

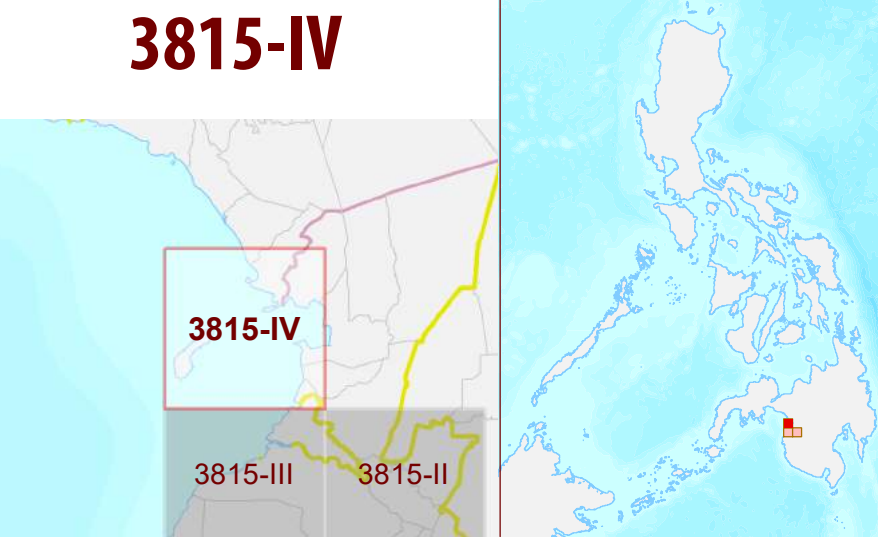
CONVENTIONAL SIGNS

- ROADS**
 - 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

3815-IV



MISCELLANEOUS INFORMATION

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

Funding Agency : Department of Agriculture - Bureau of Agricultural Research (DA-BAR)
Collaborating Agencies : Philippine Council on Agriculture and Fisheries (PCAF)
: Department of Agriculture and Fisheries - ARMM, Department of Agriculture Regional Field Office of Region IX, X, XI, XII and XIII (Caraga)
: Local Government Unit (LGU) of covered provinces and municipalities

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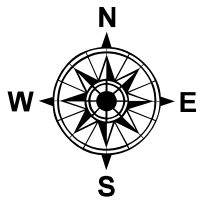
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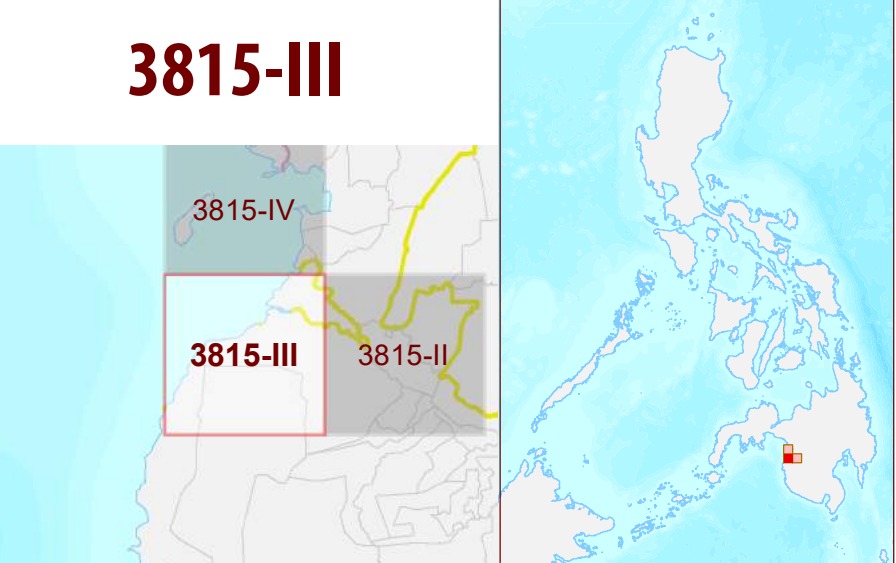
OTHER SIGNS

- NGP Areas
- Cacao
- Land limitation
- Land use

CONVENTIONAL SIGNS

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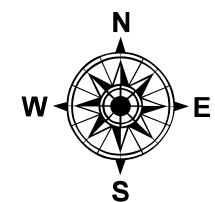
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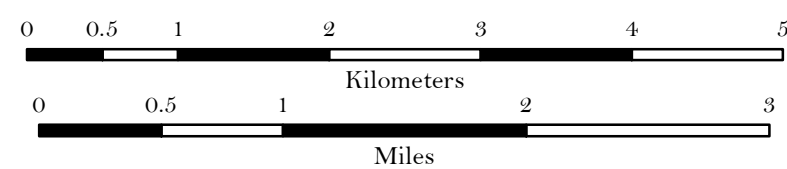
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☐ Not Suitable/ Not Relevant

OTHER SIGNS

-

CONVENTIONAL SIGNS

ROADS

- Express
- Trunk line
- Primary
- Second
- Tertiary

BOUNDARY

- Region
Province
Sea / Shoreline
Lakes / Rivers

PLACES

- — Municipality ★ ★ Capital City / City
 — • — Barangay ⊙ ● Capital Town / Town

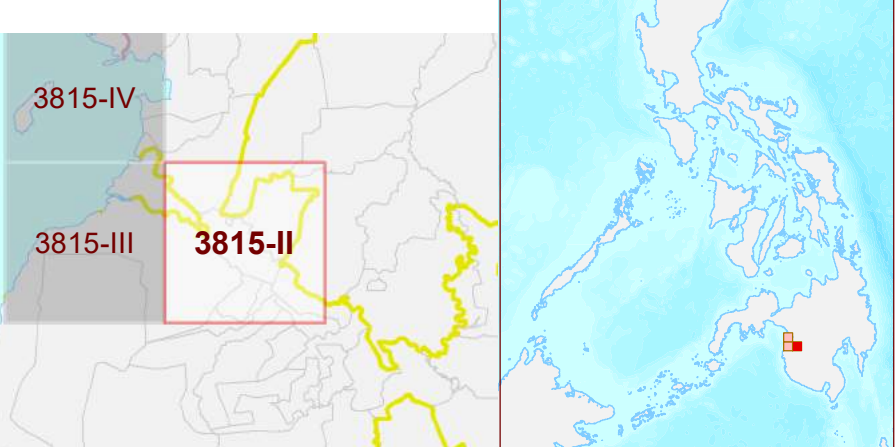
LAND USE

-  Built-up  Fishpond  Mangrove

ADJOINING SHEETS

INDEX MAP

3815-II




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