

LAND SUITABILITY MAP

ROBUSTA, LIBERICA AND EXCELSA COFFEE

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

PROVINCE OF CAMIGUIN

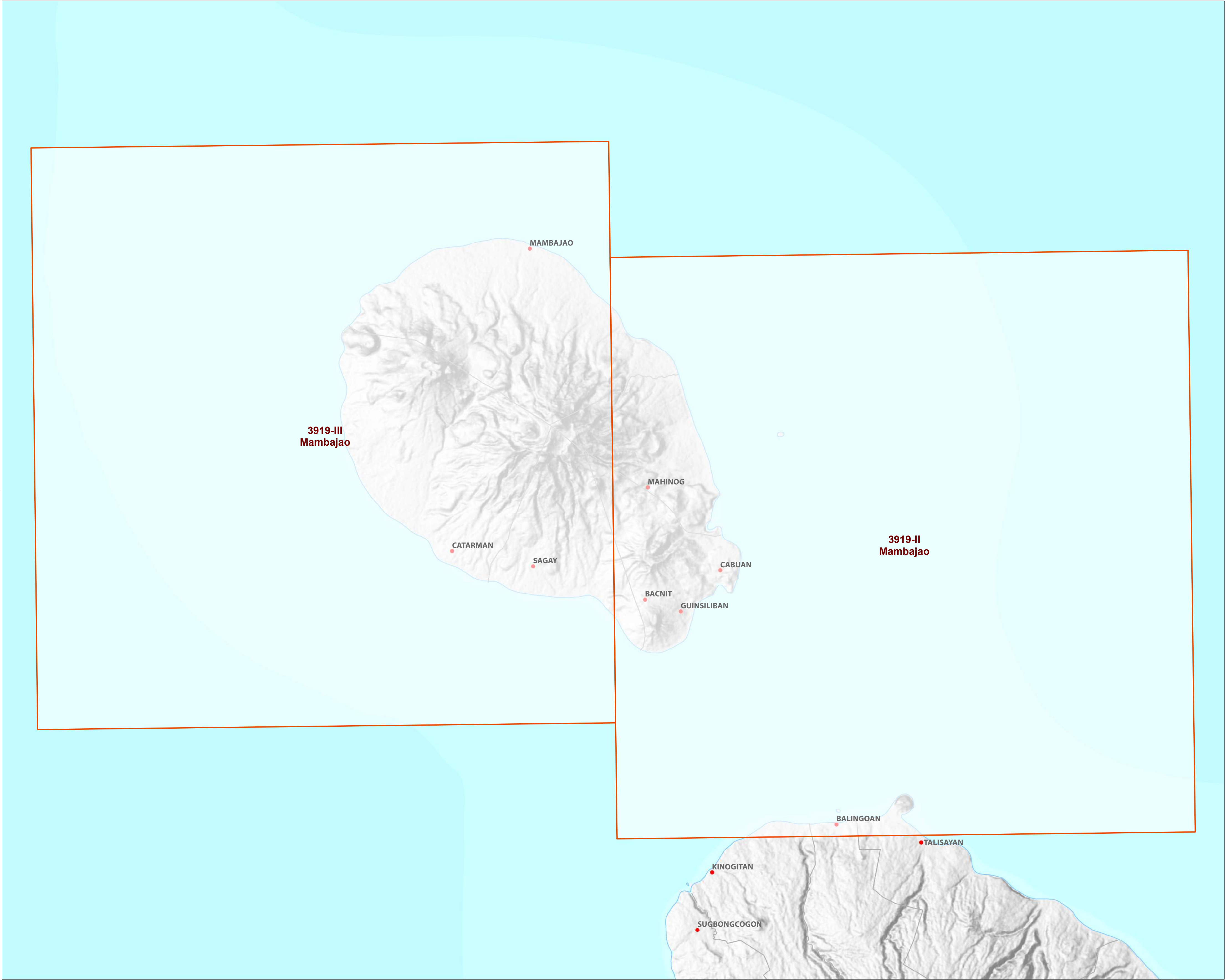


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LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS PROVINCE OF CAMIGUIN



LEGEND

Places

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

Administrative Boundary

- Regional
- Provincial
- City
- Municipal

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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 (PCA-F) 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 CAMIGUIN, REGION X

EXTENT OF SUITABILITY FOR ROBUSTA, LIBERICA AND EXCELSA 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			
CATARMAN	-	-	-	-	1,979	450	-	-	15	-	-	-	-	-	-	-	2,444
GUINSILIBAN	-	-	-	-	587	-	-	-	34	-	-	-	-	-	-	-	621
MAHINOG	-	-	-	-	812	-	-	-	25	-	25	-	-	-	-	-	862
MAMBAJAO	-	-	-	-	2,516	495	-	-	49	-	72	41	-	-	-	-	3,172
SAGAY	-	-	-	-	502	423	-	-	58	-	29	3	-	-	-	-	1,015
TOTAL	-	-	-	-	6,396	1,369	-	-	181	-	125	44	-	-	-	-	8,115

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:

<div></div> 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.	<div></div> 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.
<div></div> 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.	<div></div> 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, G, 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 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

LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

ELEVATION

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

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

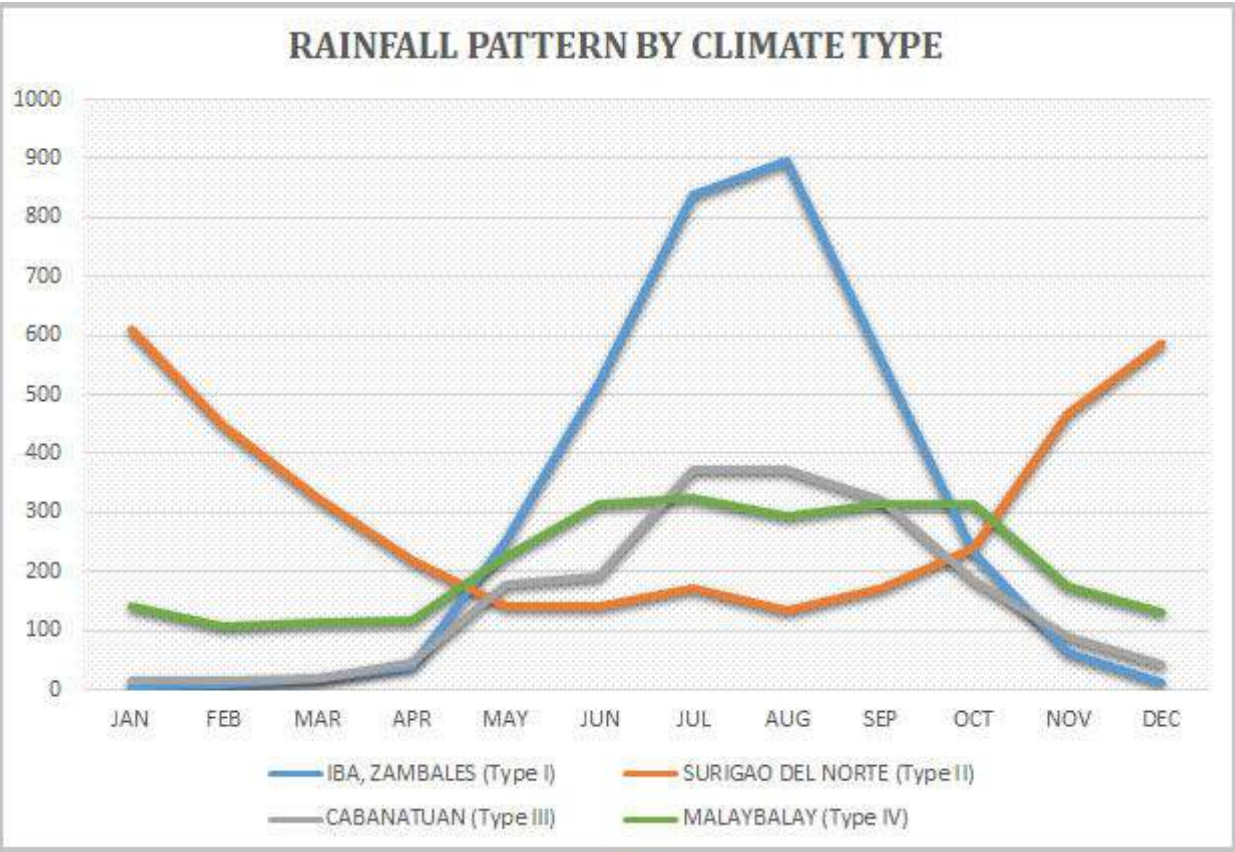
CODE	LIMITATION	CODE	LIMITATION
1	E2-Sh2-Rc2	11	T3-E3-Sh3-Rc3
2	EI2-Sh2-Rc2	12	T3-EI2
3	F2-Tc	13	T3-EI2-E3-Sh3-Rc2
4	Sh2-Rc2	14	T3
5	T2	15	T3-E3-Sh3-Rc3
6	T2-E3-Sh2-Rc2	16	T3-EI2-E3-Sh3-Rc3
7	T2-E3-Sh2-Rc3	17	Tc
8	T2-EI2-E3-Sh2-Rc2		
9	T3		
10	T3-E3-Sh3-Rc2		

CODE	LANDUSE
1	Paddy rice, irrigated
2	Paddy rice, non-irrigated
4	Corn
82	Cacao
116	Coconut
126	Grassland
130	Bare areas, unmanaged
134	Shrubs, unmanaged

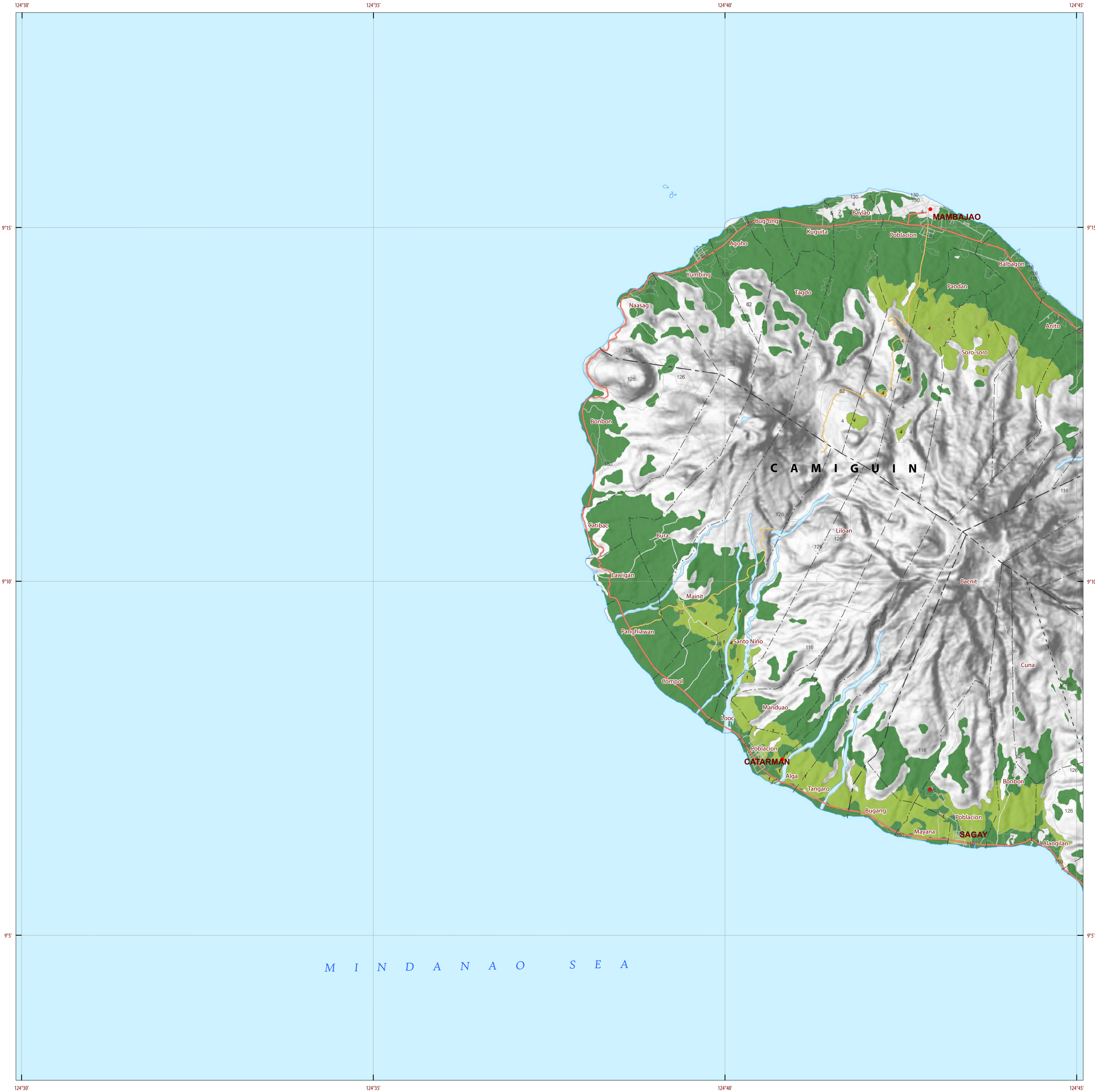
CLIMATE TYPE

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.

Whole part of Camiguin is classified as climatic Type IV.

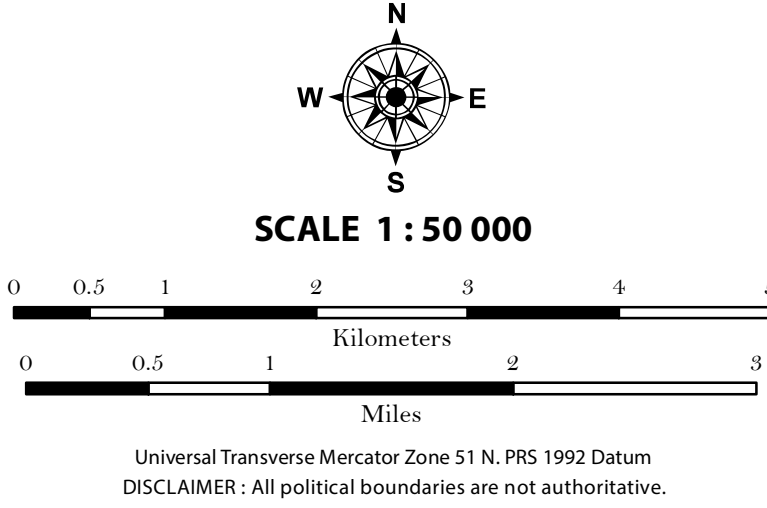


Source: PAGASA 2018, *Climatological Normals (Rainfall)*, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, <<https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>>.



LAND SUITABILITY MAP
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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

- Expressway
- Trunk line
- Primary
- Secondary
- Tertiary

BOUNDARY

- Region
- Province
- District
- Municipality
- Barangay

HYDROLOGY

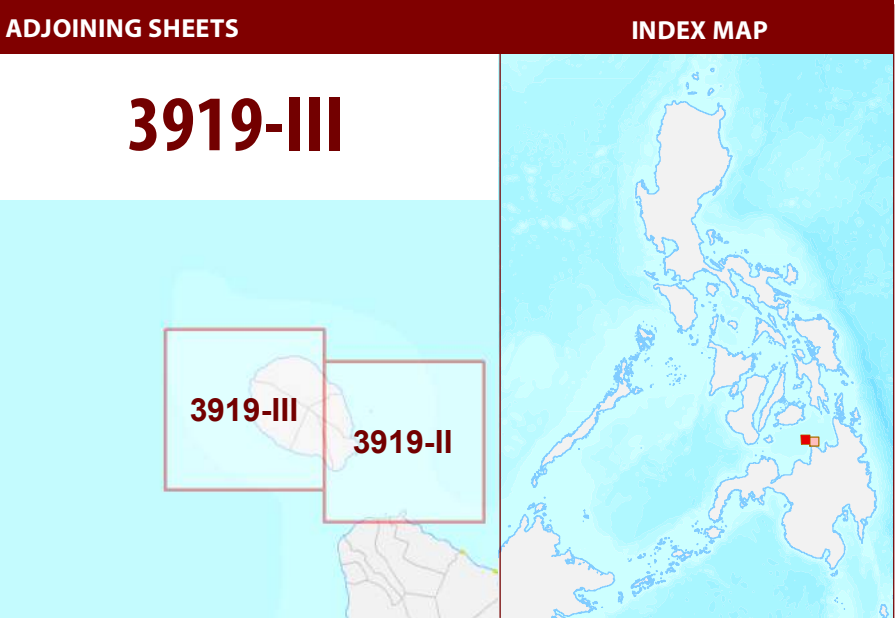
- Sea / Shoreline
- Lakes / Rivers

PLACES

- Capital City / City
- Capital Town / Town

LAND USE

- Built-up
- Fishpond
- Mangrove



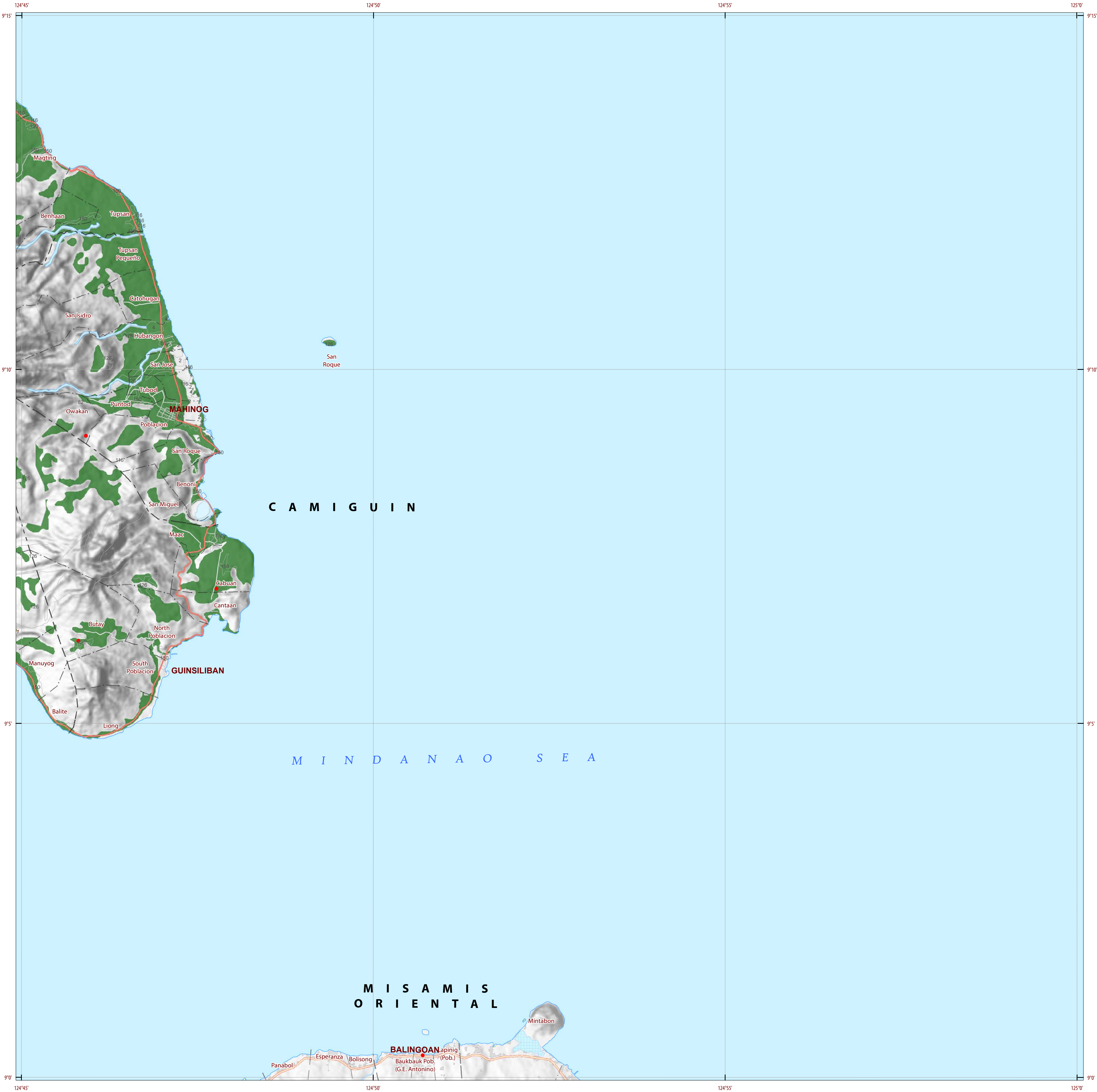
MISCELLANEOUS INFORMATION




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).

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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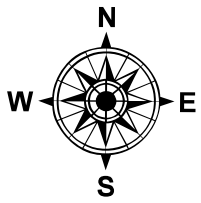
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LAND SUITABILITY MAP
ROBUSTA, LIBERICA
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LAND RESOURCES EVALUATION AND SUITABILITY
ASSESSMENT OF STRATEGIC PRODUCTION AREAS



SCALE 1 : 50 000

00.512345

Kilometers

00.5123

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.

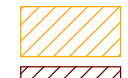
S3


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

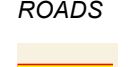
Cacao

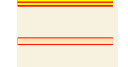
Land limitation


Land use

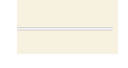
CONVENTIONAL SIGNS


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

3919-II

3919-III

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MISCELLANEOUS INFORMATION

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