

# LAND SUITABILITY MAP

## ARABICA COFFEE

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

### PROVINCE OF LAGUNA



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

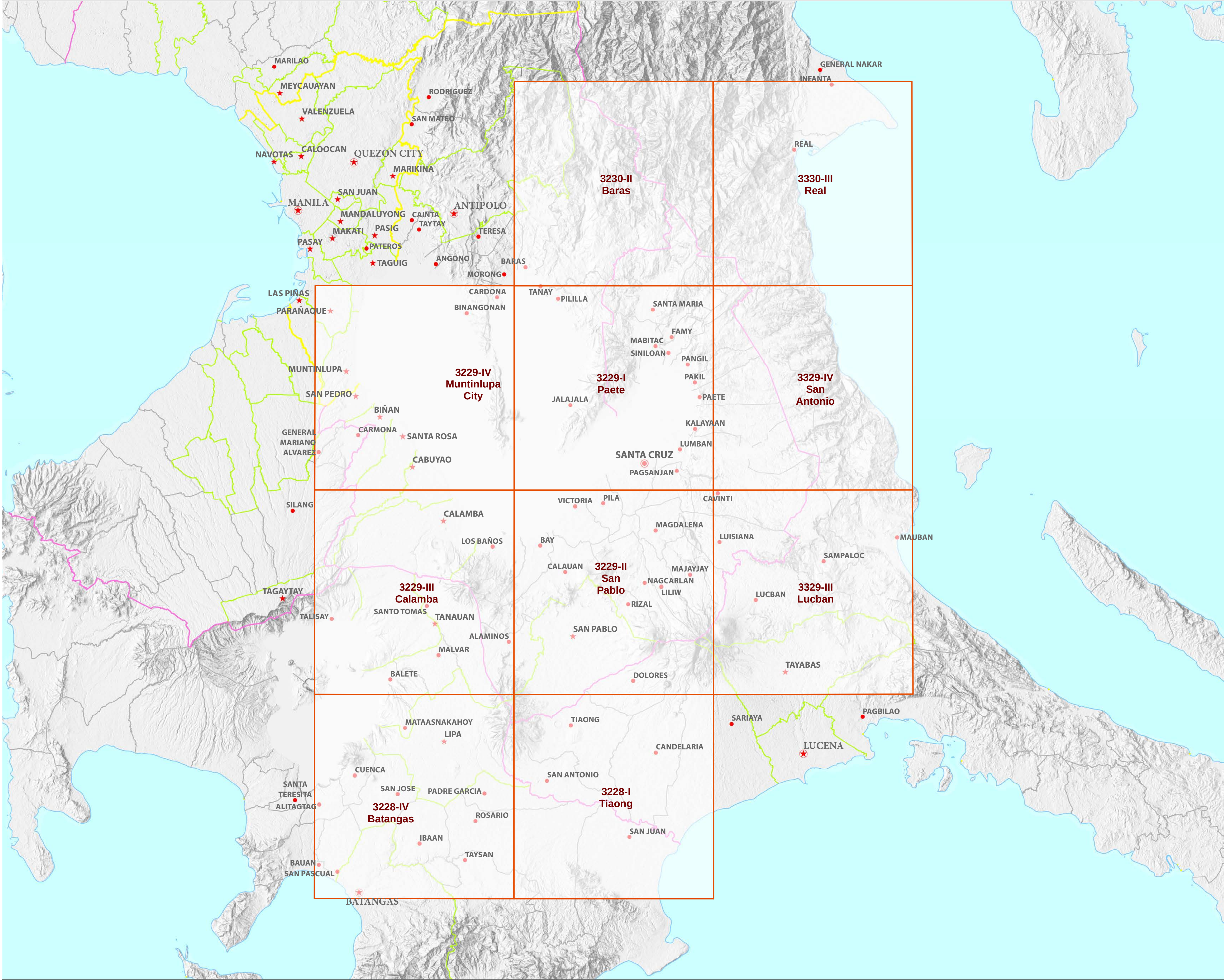
SRDC Bldg., Elliptical Road Cor. Visayas Avenue, Diliman, Quezon City 1101  
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# MAP INDEX

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

## PROVINCE OF LAGUNA



**LEGEND**

**Places**

- Capital City
- City
- Capital Town
- Town

**Administrative Boundary**

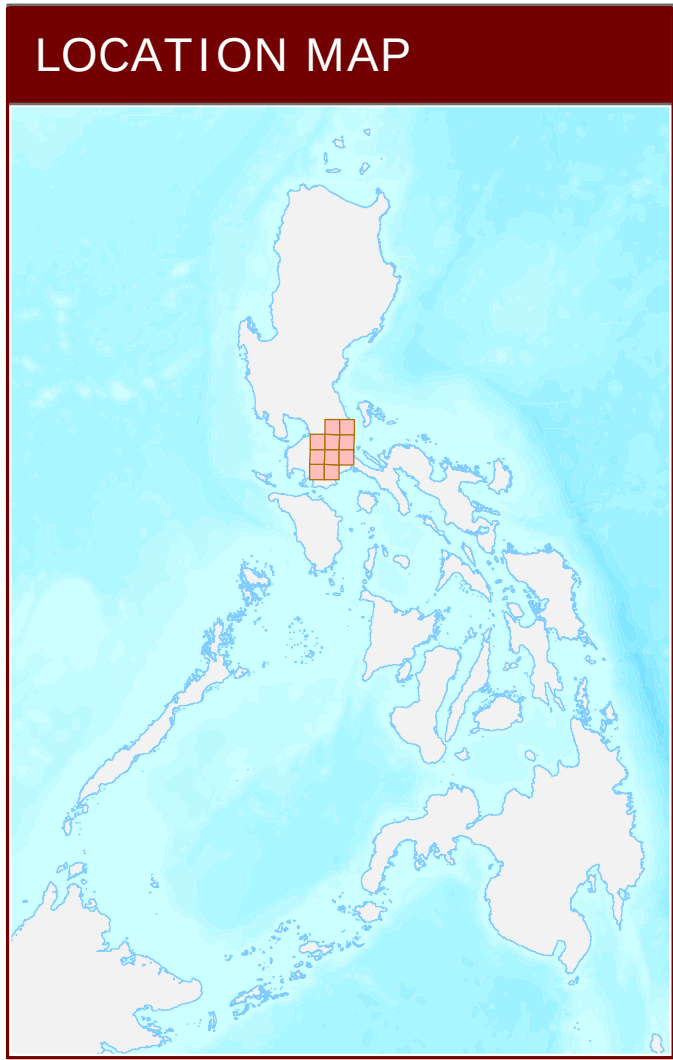
- Regional
- Provincial
- City
- Municipal

**Map Index**

- Index grid

**Topographic Relief**

**Bathymetry**





# LAND SUITABILITY MAP FOR ARABICA COFFEE

## LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS LAGUNA, REGION IV-A

### EXTENT OF SUITABILITY FOR ARABICA COFFEE PRODUCTION BY MUNICIPALITY

| MUNICIPALITY       | EXISTING COFFEE (Ha) |       |     | TOTAL EXISTING AREA (Ha) | EXPANSION AREA (Ha) |    |                       |    |                       |    | CONFLICT RESOLUTION (Ha) |    |                           |    |             |    | TOTAL POTENTIAL EXPANSION AREA (Ha) |
|--------------------|----------------------|-------|-----|--------------------------|---------------------|----|-----------------------|----|-----------------------|----|--------------------------|----|---------------------------|----|-------------|----|-------------------------------------|
|                    |                      |       |     |                          | Coconut             |    | Shrubland, unmanaged* |    | Grassland, unmanaged* |    | Corn                     |    | Rice paddy, non-irrigated |    | Other crops |    |                                     |
|                    | S1                   | S2    | S3  |                          | S1                  | S2 | S1                    | S2 | S1                    | S2 | S1                       | S2 | S1                        | S2 | S1          | S2 |                                     |
| ALAMINOS           | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| BAY                | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CABUYAO CITY       | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CALAUAN            | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CAVINTI            | -                    | 713   | 76  | 789                      | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CITY OF BIÑAN      | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CITY OF CALAMBA    | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CITY OF SAN PEDRO  | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| CITY OF SANTA ROSA | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| FAMY               | -                    | 33    | 3   | 36                       | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| KALAYAAN           | -                    | 212   | 3   | 215                      | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| LILIW              | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| LOS BAÑOS          | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| LUISIANA           | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| LUMBAN             | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| MABITAC            | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| MAGDALENA          | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| MAJAYJAY           | -                    | -     | -   | -                        | -                   | 4  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | 4                                   |
| NAGCARLAN          | -                    | -     | -   | -                        | -                   | -  | 12                    | -  | -                     | -  | 24                       | -  | -                         | -  | -           | -  | 36                                  |
| PAETE              | -                    | -     | -   | -                        | -                   | -  | 65                    | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | 65                                  |
| PAGSANJAN          | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| PAKIL              | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| PANGIL             | -                    | 22    | 6   | 28                       | -                   | -  | -                     | -  | -                     | 11 | -                        | -  | -                         | -  | -           | -  | 11                                  |
| PILA               | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| RIZAL              | -                    | -     | -   | -                        | -                   | -  | 1                     | -  | -                     | -  | 11                       | -  | -                         | -  | -           | -  | 12                                  |
| SAN PABLO CITY     | -                    | -     | -   | -                        | -                   | -  | 17                    | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | 17                                  |
| SANTA CRUZ         | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| SANTA MARIA        | -                    | -     | 100 | 100                      | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| SINILOAN           | -                    | 111   | 61  | 172                      | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| VICTORIA           | -                    | -     | -   | -                        | -                   | -  | -                     | -  | -                     | -  | -                        | -  | -                         | -  | -           | -  | -                                   |
| TOTAL              | -                    | 1,090 | 250 | 1,340                    | -                   | 4  | -                     | 95 | -                     | 11 | -                        | 36 | -                         | -  | -           | -  | 146                                 |

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

**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.

**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.

**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.

### 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.

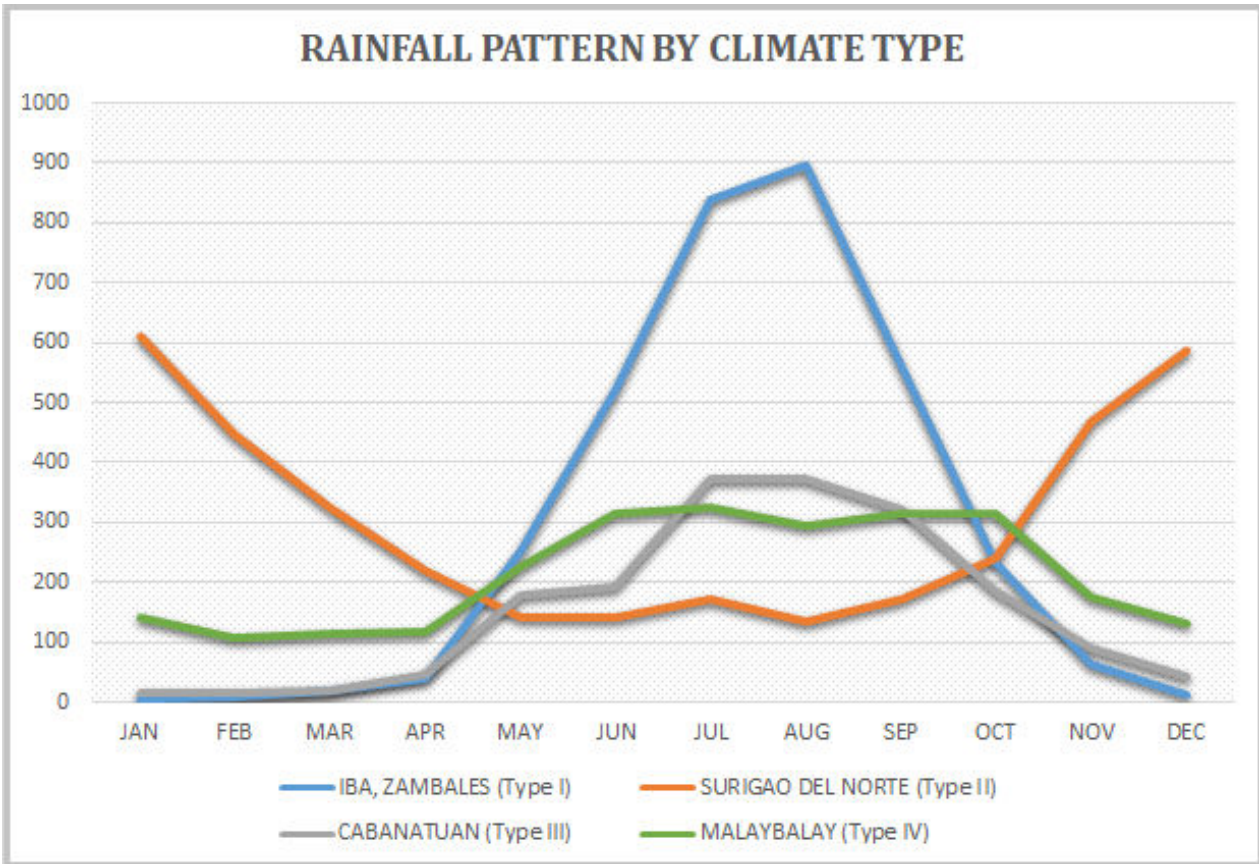
**TYPE IV** : Rainfall is more or less evenly distributed throughout the year. This type resembles Type II since it has no dry season.

Western part of Laguna lies on climatic Type I and eastern part is Type III.

### 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<br>7.3 - 7.8 | medium             | moderate       | moderate      | common        | 500-1000<br>2000-2500 | 1000-2000            | I, II         |
|                       | S3                 | >30       | <30             | S, LS, CSL, SL                | VPD,ED        | <5.0 - > 7.9           | low                | severe         | severe        | many          | <500<br>>2500         | <1000<br>>4500       |               |

|                                                                                                                                                                                                                |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                 |                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>SLOPE (%)</b><br>0 - 3 - level to gently sloping<br>3 - 8 - gently sloping to undulating<br>8 - 18 - undulating to rolling<br>18 - 30 - rolling to moderately steep<br>30 - 50 - steep<br>> 50 - very steep | <b>SOIL DRAINAGE</b><br>ED - excessively drained<br>WD - well drained<br>MWD - moderately well drained<br>SPD - somewhat poorly drained<br>PD - poorly drained<br>VPD - very poorly drained | <b>SOIL REACTION (pH)</b><br>< 4.5 - extremely acid<br>4.5 - 5.0 - very strongly acid<br>5.1 - 5.5 - strongly acid<br>5.6 - 6.0 - medium acid<br>6.1 - 6.5 - slightly acid<br>6.6 - 7.2 - neutral<br>7.3 - 7.8 - mildly alkaline<br>7.9 - 8.4 - moderately alkaline<br>> 8.5 - strongly alkaline | <b>SOIL TEXTURE</b><br><b>Coarse</b><br>S - sand<br>LS - loamy sand<br>CSL - coarse sandy loam<br>SL - sandy loam<br><b>Medium</b><br>FSL - fine sandy loam<br>L - loam<br>SiL - silt loam<br>CL - clay loam<br>SiCL - silty clay loam<br>SCL - sandy clay loam | <b>Fine</b><br>SC - sandy clay<br>SiC - silty clay<br>C - clay<br>HC - heavy clay |
| <b>SOIL DEPTH (cm)</b><br>0 - 30 - very shallow<br>30 - 50 - shallow<br>50 - 100 - moderately deep<br>> 100 - deep to very deep                                                                                | <b>SURFACE IMPEDIMENT</b><br>ROCK OUTCROPS<br>< 10% - none - few<br>10 - 30% - common<br>> 30% - many                                                                                       |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                 |                                                                                   |
| <b>LAND LIMITATIONS DESCRIPTION AND COMBINATIONS</b><br><b>ELEVATION</b><br>EI2 - 500 - 1000m or 2000 - 2500m<br>EI3 - < 500m or > 2500m                                                                       | <b>SOIL DRAINAGE</b><br>D2 - Somewhat poorly drained to poorly drained<br>D3 - Very poorly drained or excessively drained                                                                   | <b>SOIL DEPTH</b><br>Sh2 - Shallow to moderately deep (30 - 100cm)<br>Sh3 - Very shallow (< 30cm)                                                                                                                                                                                                | <b>SOIL EROSION</b><br>E2 - Moderate erosion<br>E3 - Severe erosion                                                                                                                                                                                             |                                                                                   |
| <b>SLOPE/TOPOGRAPHY</b><br>T2 - Undulating to moderately steep<br>T3 - Steep to very steep                                                                                                                     | <b>SOIL TEXTURE</b><br>Tc - Coarse texture                                                                                                                                                  | <b>ROCK OUTCROPS</b><br>Rc2 - Common<br>Rc3 - Many                                                                                                                                                                                                                                               | <b>FLOODING</b><br>F2 - Moderate seasonal flooding<br>F3 - Severe seasonal flooding                                                                                                                                                                             |                                                                                   |

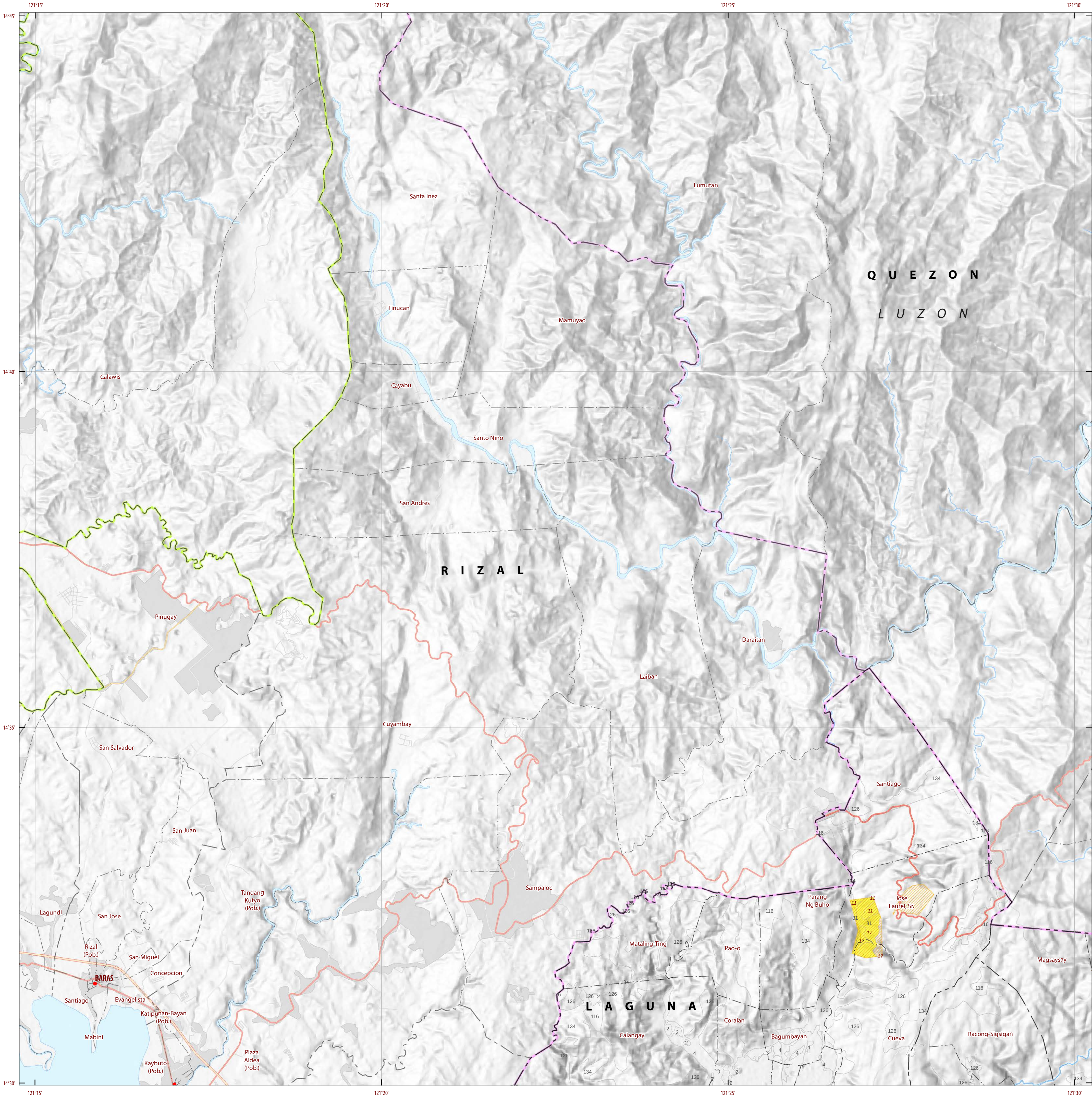


Source: PAGASA 2018, *Climatological Normals (Rainfall)*, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), accessed 27 July 2018, <<https://www1.pagasa.dost.gov.ph/index.php/climate/climatological-normals>>.

| CODE | LAND LIMITATION | CODE | LAND LIMITATION   |
|------|-----------------|------|-------------------|
| 1    | EI2             | 11   | T2-EI2-E3-Sh2-Rc2 |
| 2    | EI2-E2-Sh2-Rc2  | 12   | T2-EI2-E3-Sh2-Rc3 |
| 3    | EI2-F2-D2       | 13   | T3-E3-Sh3-Rc2     |
| 4    | EI2-Rc2         | 14   | T3-E3-Sh3-Rc3     |
| 5    | EI2-Sh2-Rc2     | 15   | T3-EI2            |
| 6    | EI2-Sh2-Rc3     | 16   | T3-EI2-E3         |
| 7    | Sh2-Rc2         | 17   | T3-EI2-E3-Sh3-Rc2 |
| 8    | T2-E3-Sh2-Rc2   | 18   | T3-EI2-E3-Sh3-Rc3 |
| 9    | T2-EI2          |      |                   |
| 10   | T2-EI2-E3       |      |                   |

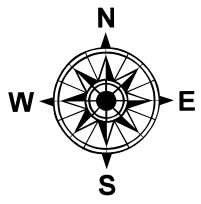
| CODE | LAND USE             |
|------|----------------------|
| 2    | Non-irrigated rice   |
| 4    | Corn                 |
| 81   | Coffee               |
| 82   | Cacao                |
| 112  | Sugarcane            |
| 116  | Coconut              |
| 126  | Grassland            |
| 134  | Shrubland, unmanaged |



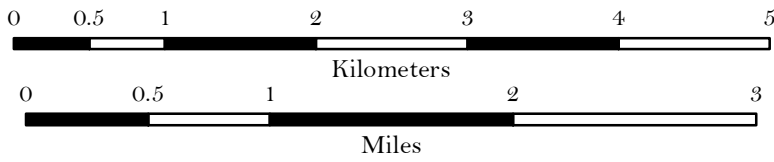


## LAND SUITABILITY MAP ARABICA COFFEE

### 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

- 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**

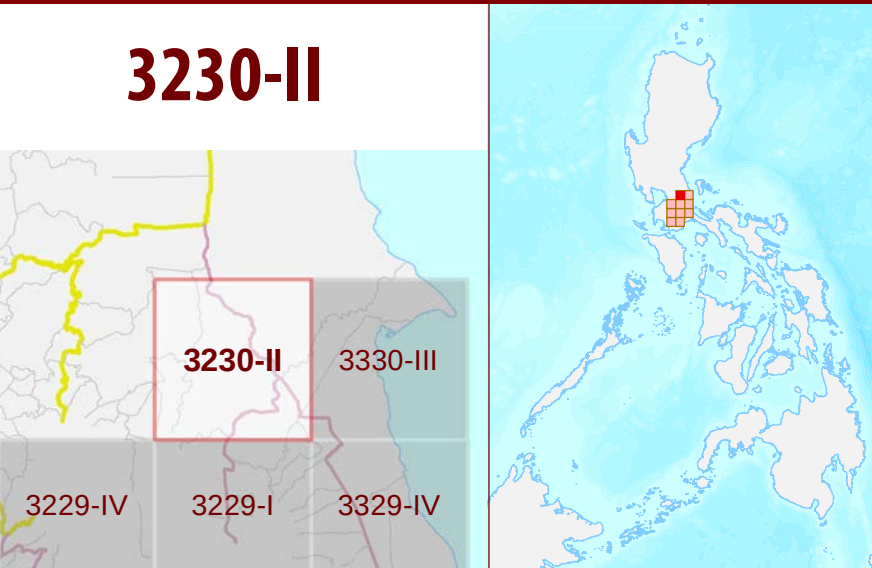
##### OTHER SIGNS

- NGP Areas
- Coffee
- 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

**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 (PAO, 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 Coffee and Cacao Project** implemented by ISWM (2017).

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

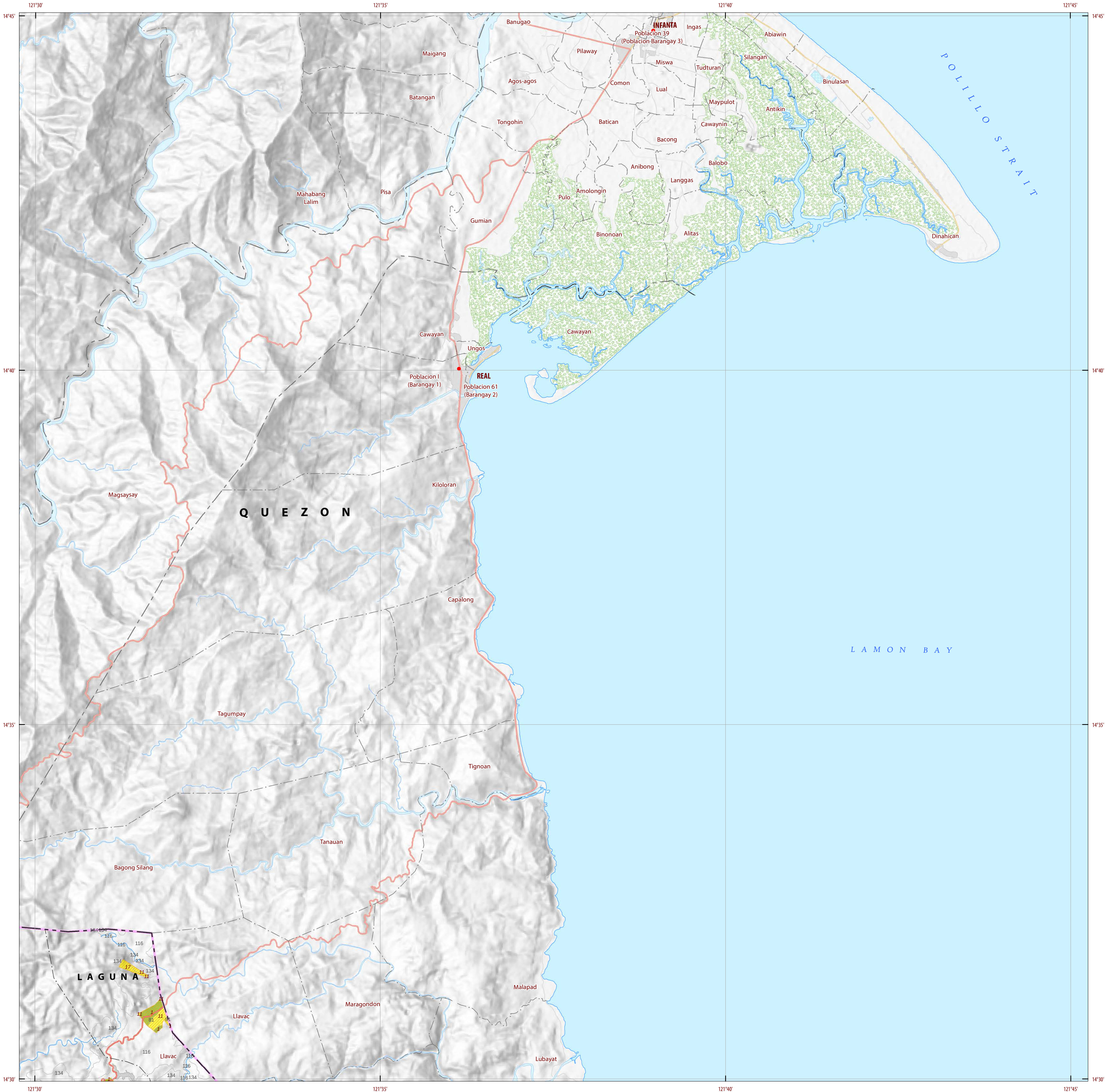
Funding Agency : Department of Agriculture - Bureau of Agricultural Research (DA-BAR)  
Collaborating Agencies : Philippine Council on Agriculture and Fisheries (PCAF)  
Department of Agriculture Regional Field Office of CAR, Region II, IV-A, IV-B, VI, VII, VIII, IX, X, XI, XII and CARAGA(XIII)  
Local Government Unit (LGU) of covered provinces and municipalities

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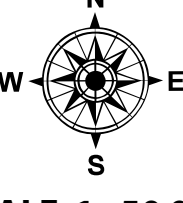


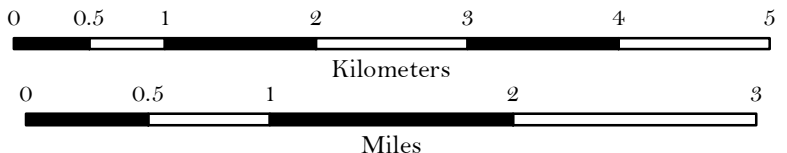




LAND SUITABILITY MAP  
ARABICA COFFEE

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

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.

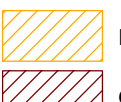
S3

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.

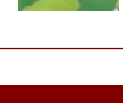
Not Suitable/ Not Relevant

OTHER SIGNS

 NGP Areas

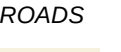
 Coffee

 Land limitation

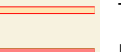
 Land use

CONVENTIONAL SIGNS

ROADS

 Expressway

 Trunk line

 Primary

 Secondary

 Tertiary

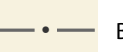
BOUNDARY

 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

3330-III

3230-II 3330-III 3229-I 3329-IV

INDEX MAP

MISCELLANEOUS INFORMATION

SOURCES OF INFORMATION

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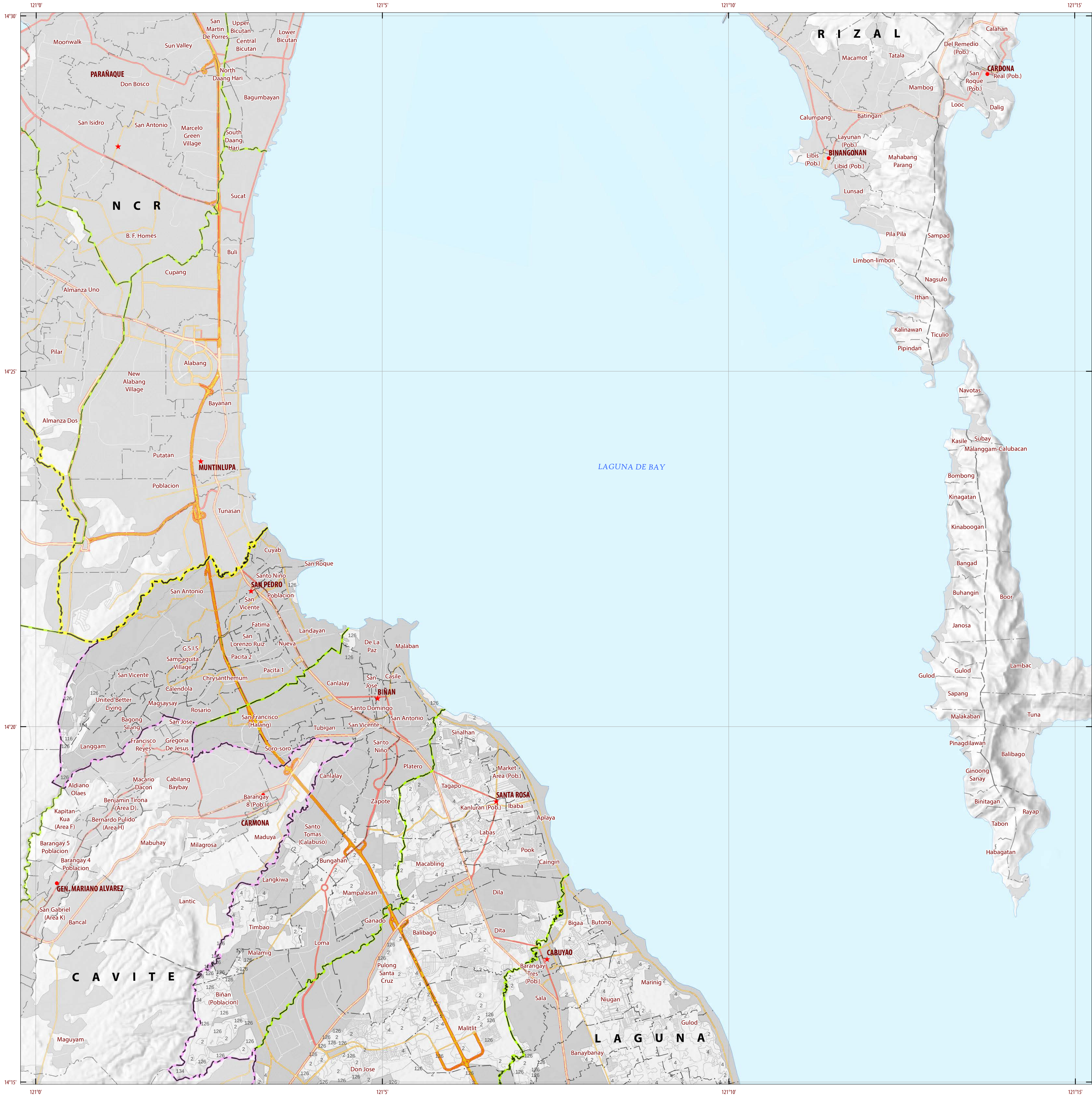
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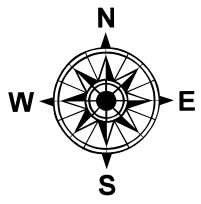
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Tel/Fax No.: (+632) 332-9534 E-mail: bswmcenter@yahoo.com



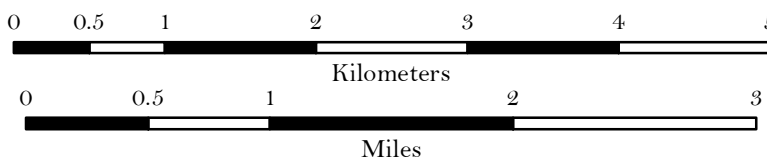


## LAND SUITABILITY MAP ARABICA COFFEE

### 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

- 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**

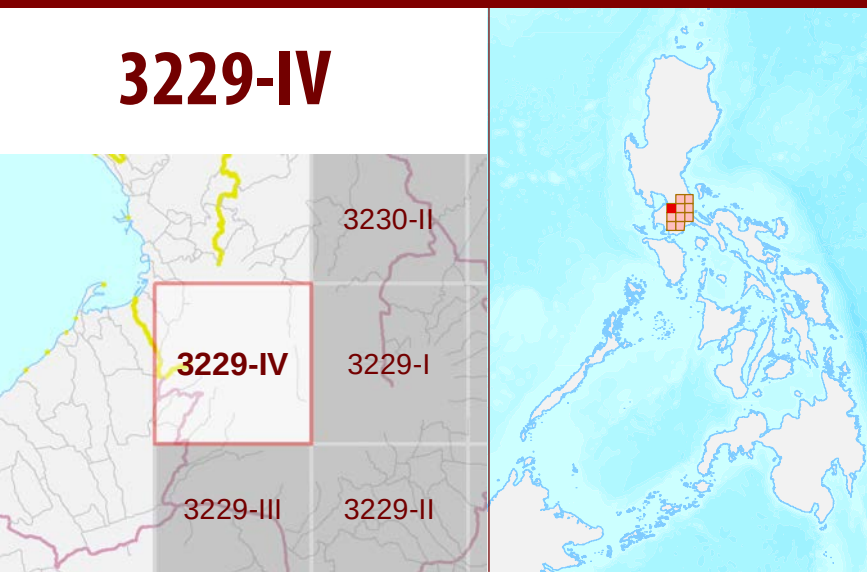
##### OTHER SIGNS

- NGP Areas
- Coffee
- 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

**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 Coffee and Cacao Project** implemented by BSWM (2017).

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

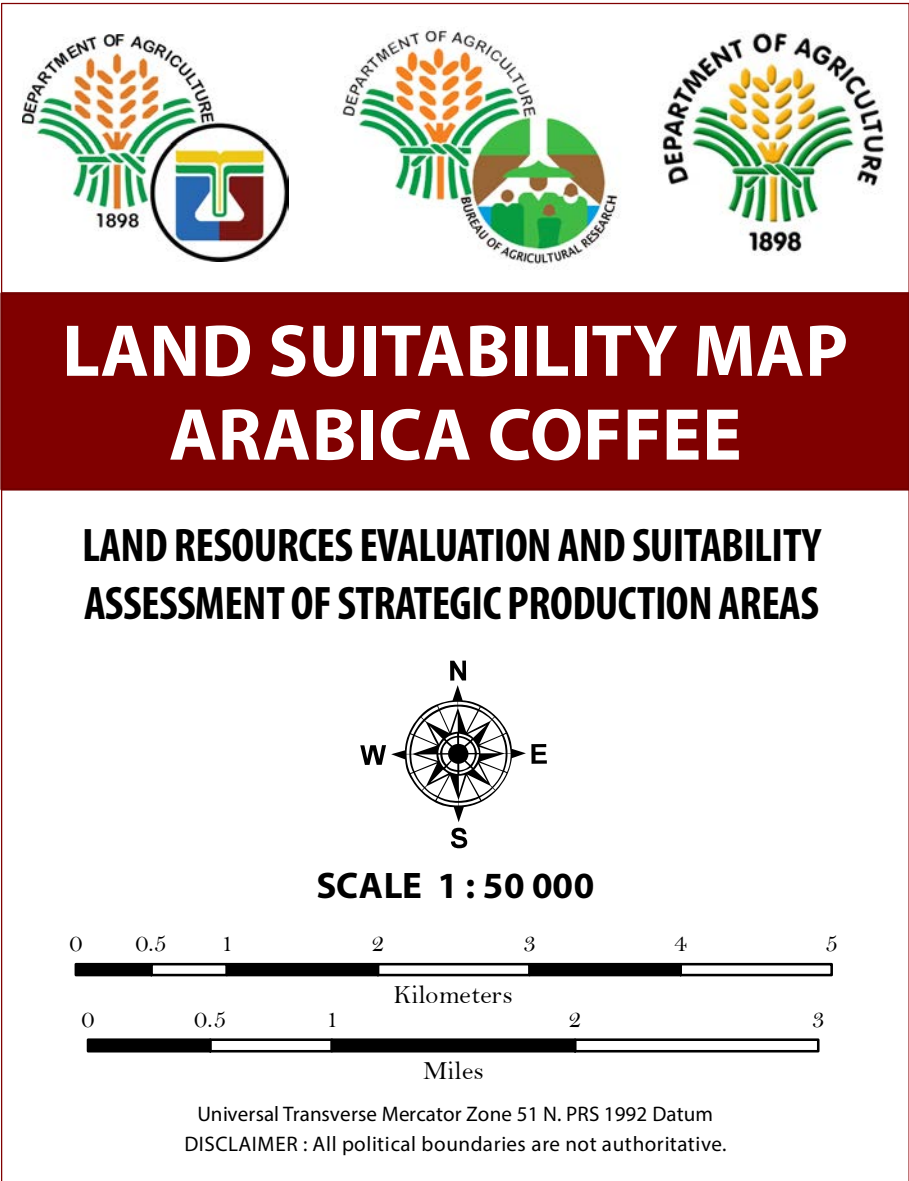
Funding Agency : Department of Agriculture - Bureau of Agricultural Research (DA-BAR)  
Collaborating Agencies : Philippine Council on Agriculture and Fisheries (PCAF)  
: Department of Agriculture Regional Field Office of CAR, Region II, IV-A, IV-B, VI, VII, VIII, IX, X, XI, XII and CARAGA(XIII)  
: Local Government Unit (LGU) of covered provinces and municipalities

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Tel/Fax No. : (+632) 332-9534 E-mail : bswmcenter@yahoo.com





## SUITABILITY CLASSES

☐ Not Suitable/ Not Relevant

### OTHER SIGNS



**1** Land limitation  
116 Land use

## CONVENTIONAL SIGNS

LAND USE

 Built-up

 Fishpond

 Mangrove

## ADJOINING SHEETS

## INDEX MAP

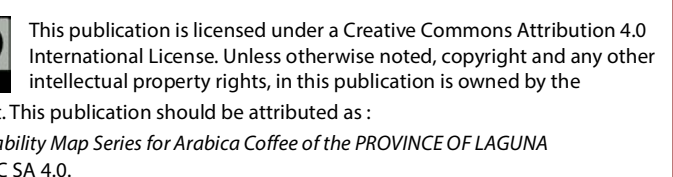
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**Project Leader :**       BERNARDO B. PASCUA  
**GIS and Cartography :**   IRVIN K. SAMALCA

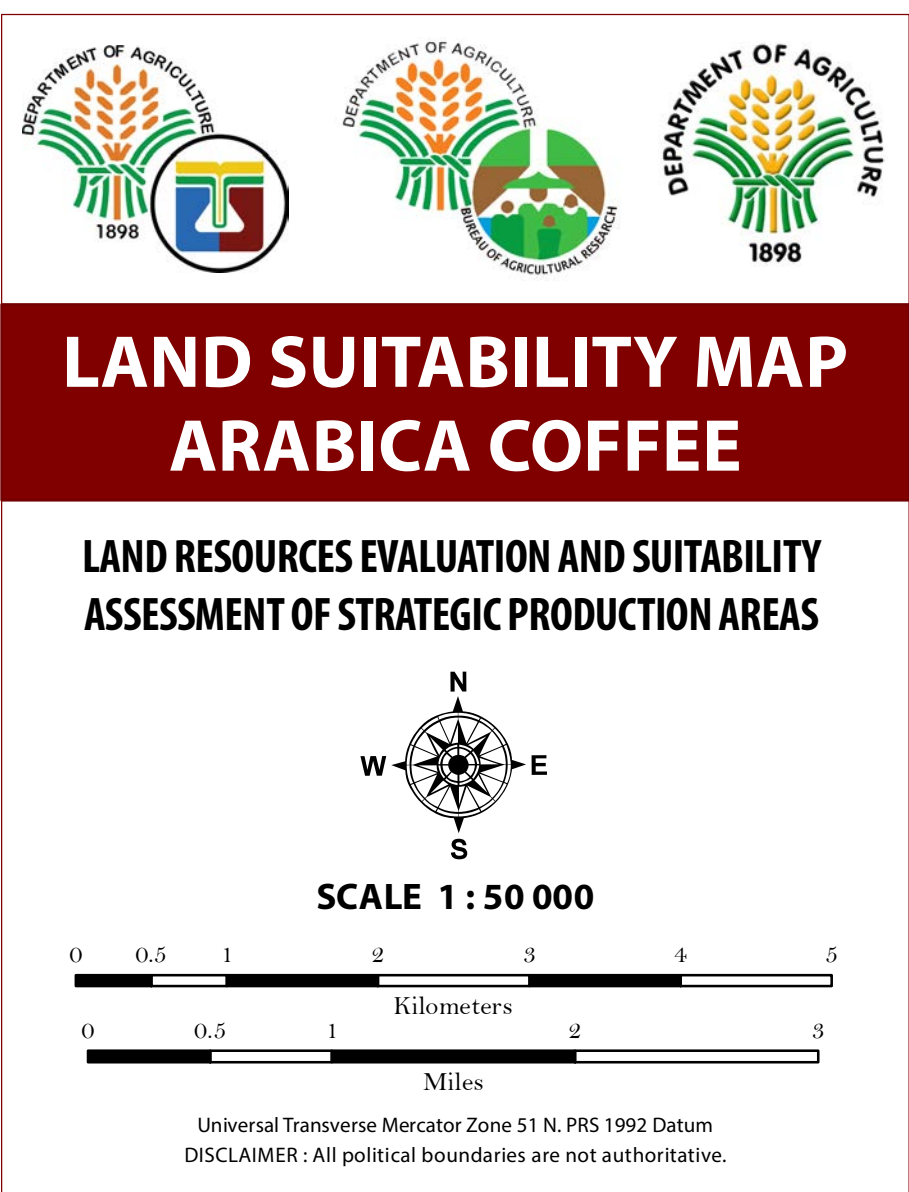
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**Collaborating Agencies :**   Philippine Council on Agriculture and Fisheries (PCAF)  
                                  Department of Agriculture Regional Office of CAR, Region II, IV-A, IV-B, VI, VII, VIII, X, XI, XII and CARAGA(XIII)  
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### SUITABILITY CLASSES

**OTHER SIGNS**

|                                                                                       |           |                                                                                       |                 |
|---------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|-----------------|
|  | NGP Areas |  | Land limitation |
|  | Coffee    |                                                                                       | Land use        |

ROADS                      BOUNDARY                      HYDROLOGY

ADJOINING SHEETS INDEX MAP

3329-IV 

**SOURCES OF INFORMATION :** Topographic information taken from NAMRIA Topographic Map at 1:50,000 scale. Land resources information from the Agricultural Land Management and

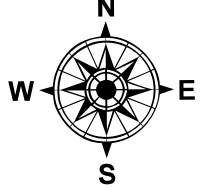
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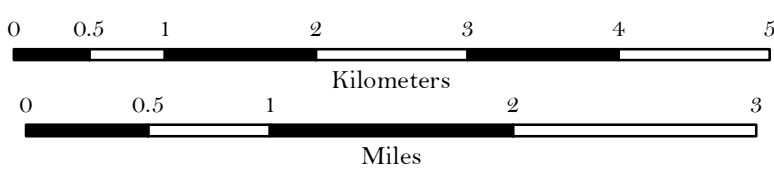


## LAND SUITABILITY MAP ARABICA COFFEE

### 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

- 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

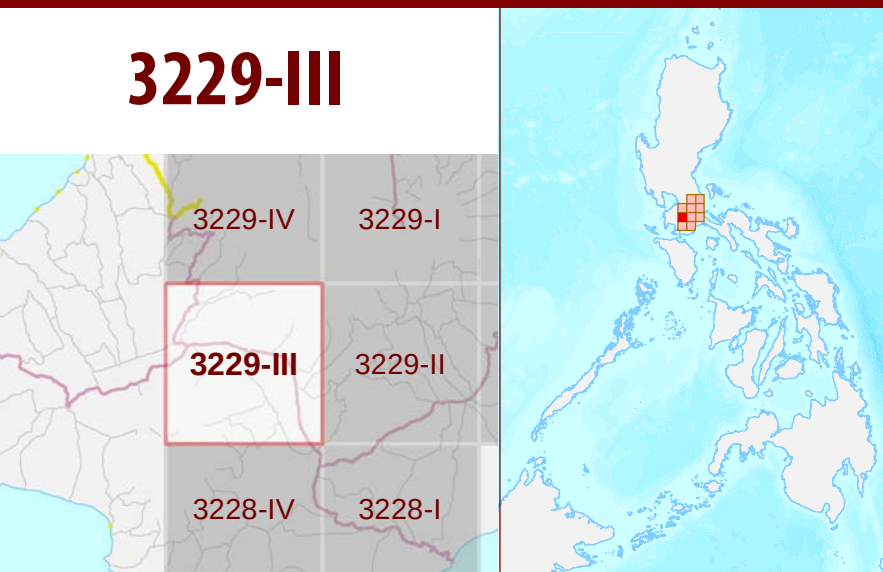
##### OTHER SIGNS

- NGP Areas
- Coffee
- 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 : IRVIN K. SAMALCA

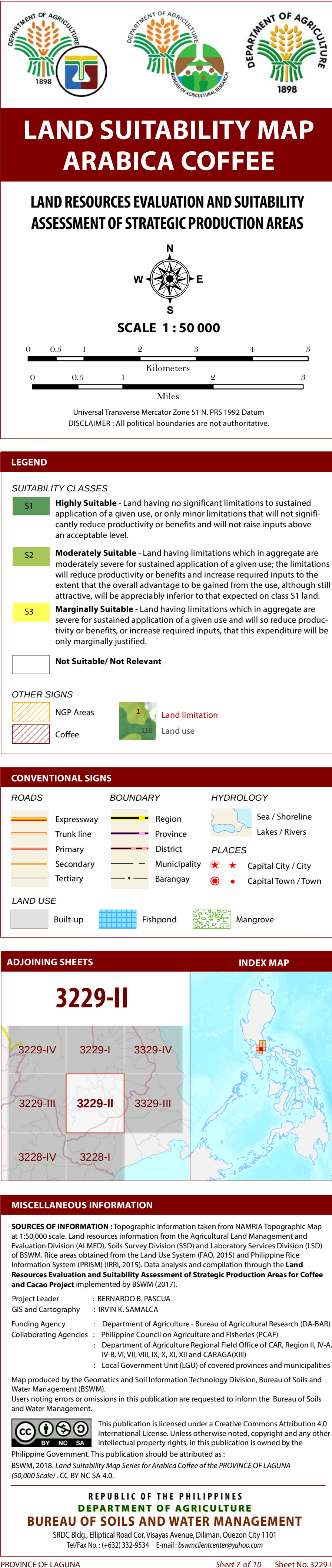
Funding Agency : Department of Agriculture - Bureau of Agricultural Research (DA-BAR)  
Collaborating Agencies : Philippine Council on Agriculture and Fisheries (PCAF)  
Department of Agriculture Regional Field Office of CAR, Region II, IV-A, IV-B, VI, VII, VIII, IX, X, XI, XII and CARAGA(XIII)  
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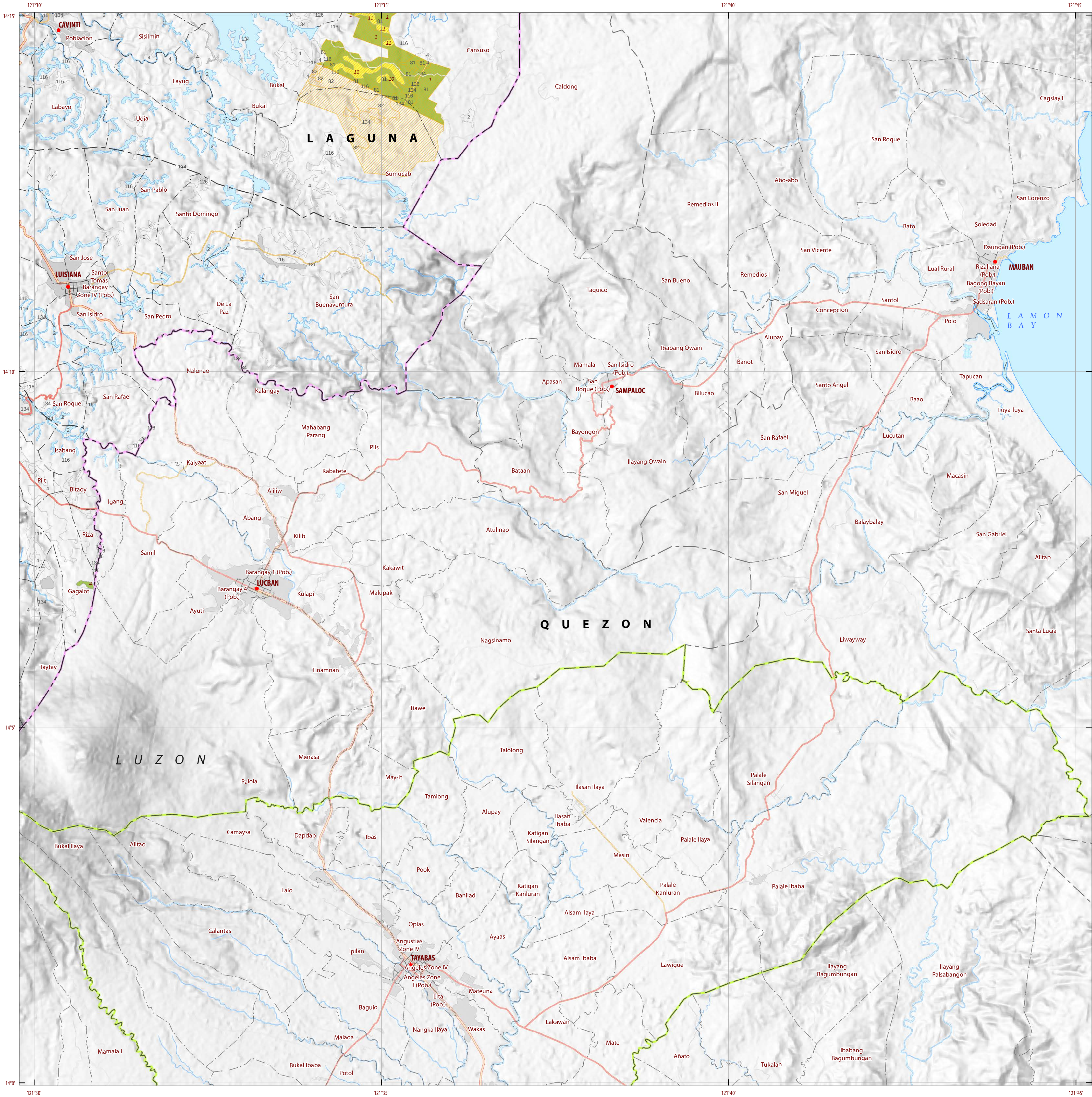
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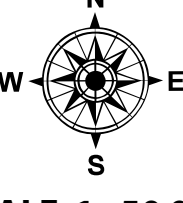




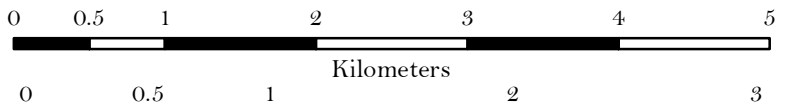


LAND SUITABILITY MAP  
ARABICA COFFEE

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

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

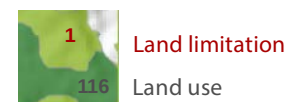
- Land having limitations which in aggregate are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified.

Not Suitable/ Not Relevant

OTHER SIGNS

 NGP Areas

 Coffee

 Land limitation

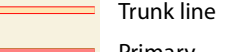
 Land use

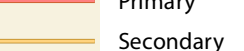
CONVENTIONAL SIGNS

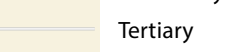
ROADS

 Expressway

 Trunk line

 Primary

 Secondary

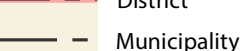
 Tertiary

BOUNDARY

 Region

 Province

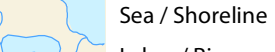
 District

 Municipality

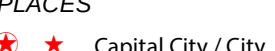
 Barangay

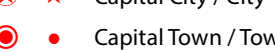
HYDROLOGY

 Sea / Shoreline

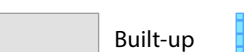
 Lakes / Rivers

PLACES

 Capital City / City

 Capital Town / Town

LAND USE

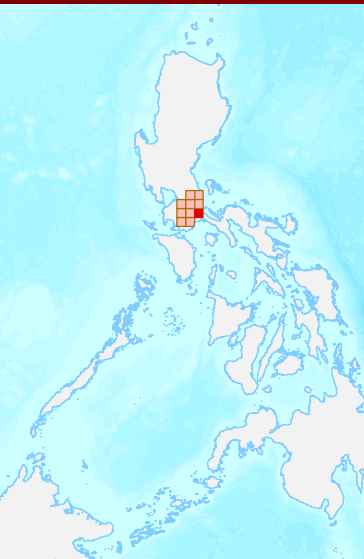
 Built-up

 Fishpond

 Mangrove

ADJOINING SHEETS

3329-III



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 (PAO, 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 Coffee and Cacao 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

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Tel/Fax No.: (+632) 332-9534 E-mail: bswmclientcenter@yahoo.com

PROVINCE OF LAGUNA

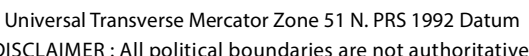
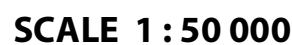
Sheet 8 of 10

Sheet No. 3329-III





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



### SUITABILITY CLASSES

### SUITABILITY CLASSES

- |    |                                                                                                                                                                                                                                                                                                                                                                                          |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S1 | <b>Highly Suitable</b> - 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 | <b>Moderately Suitable</b> - 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 | <b>Marginally Suitable</b> - Land having limitations which in aggregate are so 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  
Coffe

- Land limitation**  
Land use

## CONVENTIONAL SIGNS

## ROADS

- 
- Diagram illustrating the five levels of the hierarchy of needs:
- Expressive
  - Trust
  - Primary
  - Secondary
  - Tertiary

## BOUNDARY



Sea / Shoreline  
Lakes / Rivers

## PLACES

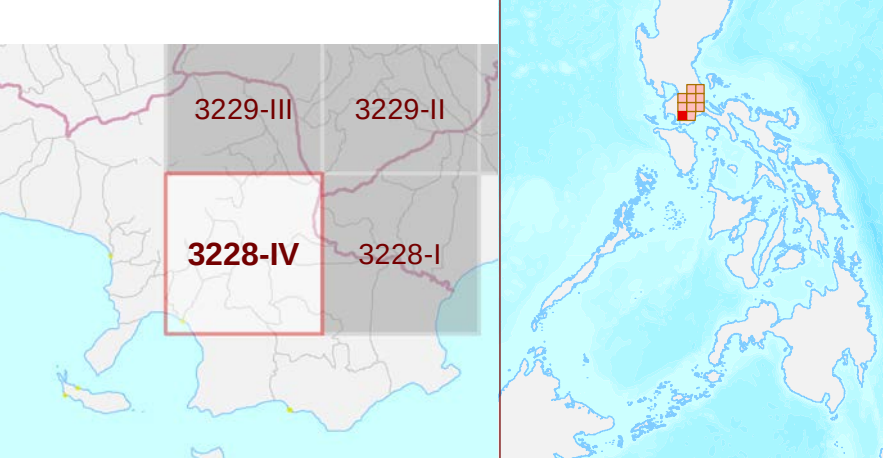
- ★ Capital City / City

## LAND USE

-  Built-up  Fishpond  Mangrove

## ADJOINING SHEETS

**3228-IV**



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

**Funding Agency :** Department of Agriculture - Bureau of Agricultural Research (DAR-BA)

**Collaborating Agencies :** Philippine Council on Agriculture and Fisheries (PCAF),  
Philippines Agriculture and Fisheries Council (PAFC),  
Department of Agriculture - Bureau of Agricultural Research (DAR-BA),  
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Local Government Unit (LGU) of covered provinces and municipalities.

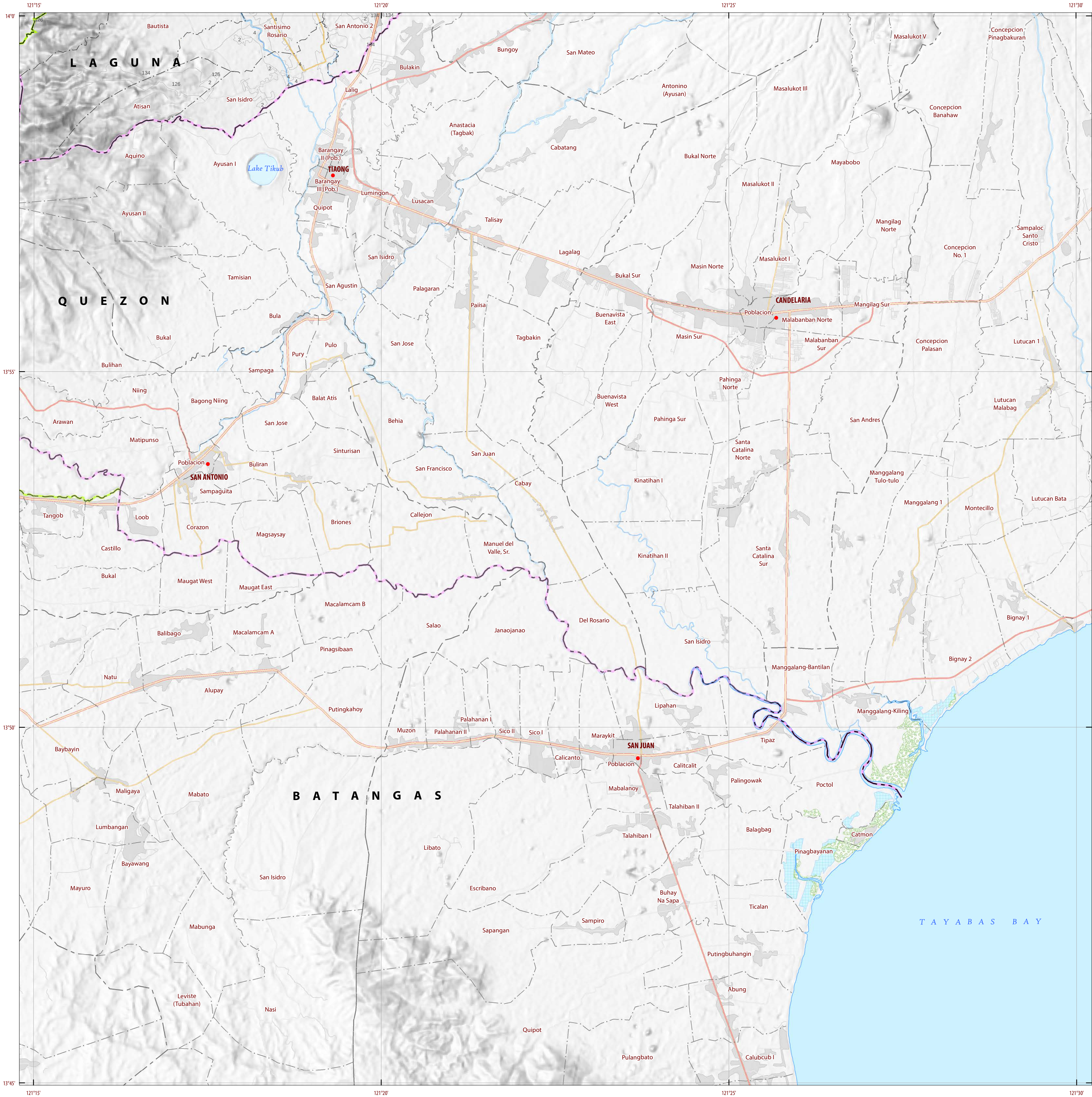
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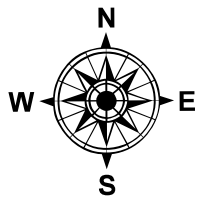




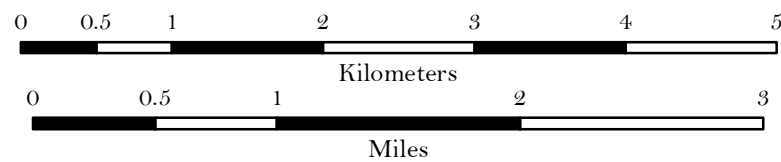


LAND SUITABILITY MAP  
ARABICA COFFEE

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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- 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
- Coffee
- Land limitation
- Land use

**CONVENTIONAL SIGNS**

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

**LAND USE**

- Built-up
- Fishpond
- Mangrove

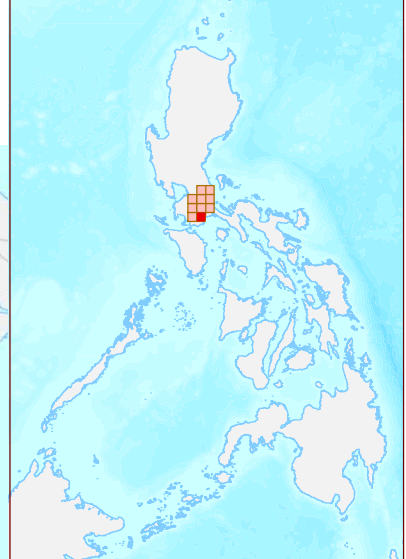
**ADJOINING SHEETS**

3228-I

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**INDEX MAP**



**MISCELLANEOUS INFORMATION**

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