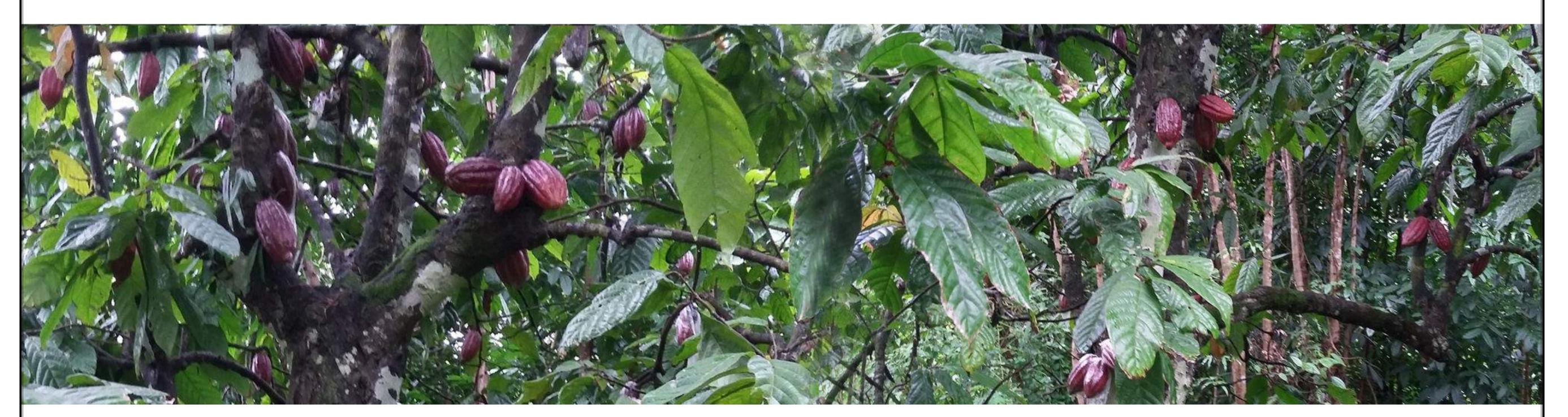
LAND SUITABILITY MAP

CACAO

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS

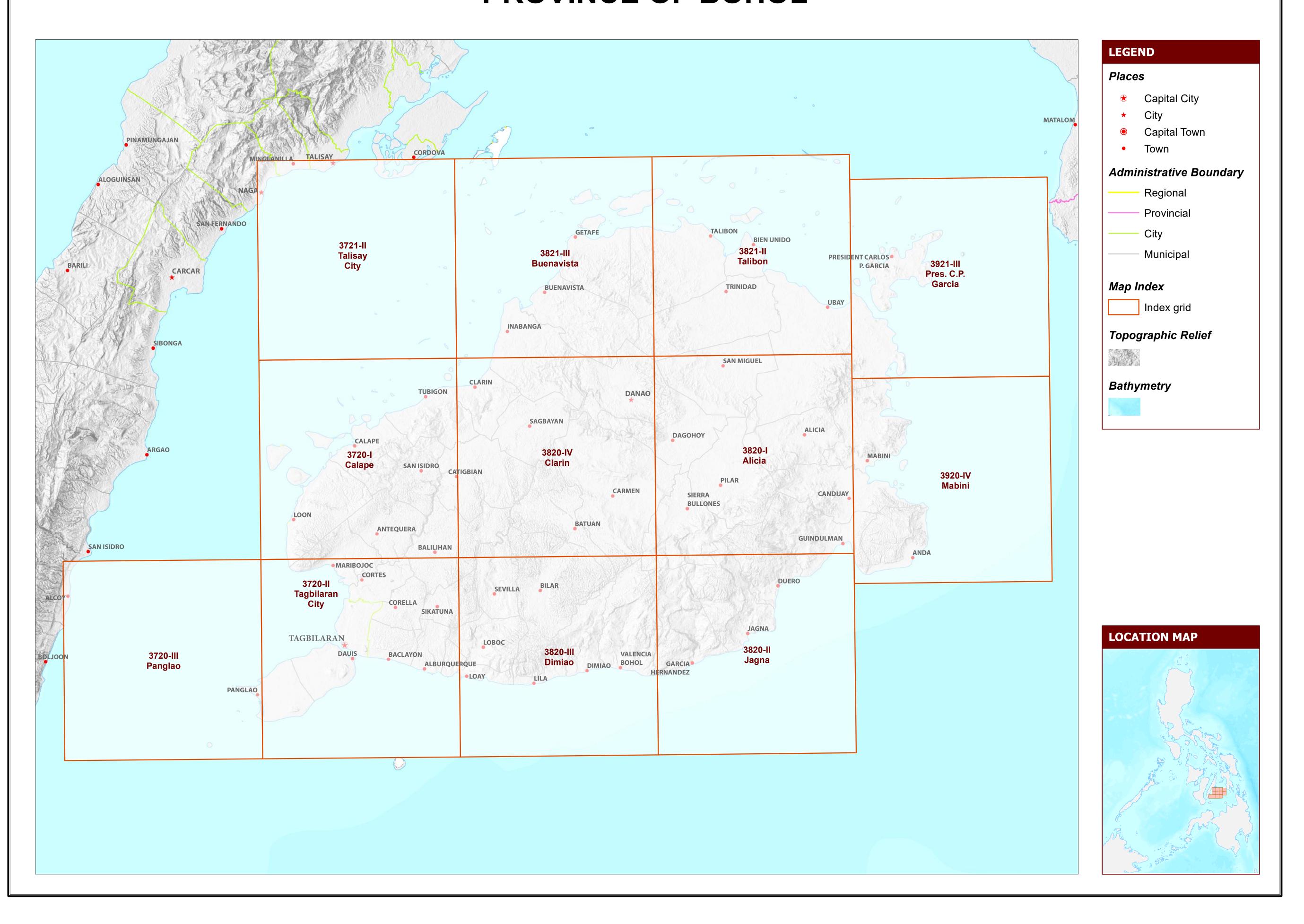
PROVINCE OF BOHOL





MAP INDEX

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



LAND SUITABILITY MAP FOR **CACAO**

LAND RESOURCES EVALUATION AND SUITABILITY ASSESSMENT OF STRATEGIC PRODUCTION AREAS BOHOL, REGION VII

EXTENT OF SUITABILITY FOR CACAO PRODUCTION BY MUNICIPALITY

| | | | | | | EX | PANSION | AREA (I | la) | | | CONF | LICT RES | OLUTION | (Ha) | | ТОТАІ |
|-----------------------------|-----------|-----------|------------|--------------------------------|--------------|---------------|----------------|--------------|----------------|--------------|-----------|--------------|-------------------|-------------|-----------|-----------|---------------------------|
| MUNICIPALITY | EXISTI | NG CACA | 10 (Ha) | TOTAL EXISTING AREA (Ha) | Coco | onut | Shrub unmar | • | Grass unmar | - | Со | rn | Rice p non-irr | - 1 | Other | crops | TOTAL POTENTIAL EXPANSION |
| | S1 | S2 | S 3 | | S1 | S2 | S1 | S2 | S1 | S2 | S1 | S2 | S1 | S2 | S1 | S2 | AREA (Ha) |
| ALBURQUERQUE | - | ı | - | - | 1,906 | 40 | 18 | 40 | 106 | ı | 245 | - | - | - | - | - | 2,355 |
| ALICIA | - | - | - | - | 2,368 | 365 | 119 | 93 | 1,380 | 45 | 568 | - | 722 | - | - | - | 5,660 |
| ANDA | - | - | - | - | 726 | 1,200 | 200 | 875 | - | - | 32 | 2 | 48 | 1 | - | - | 3,084 |
| ANTEQUERA | - | - | - | - | 2,725 | 32 | 2,011 | 61 | 1 | - | 69 | - | 18 | - | - | - | 4,917 |
| BACLAYON | - | - | - | - | 1,013 | - | - | - | 1,334 | - | 317 | - | 35 | - | - | - | 2,700 |
| BALILIHAN | - | | - | - | 828 | - | 1,550 | 267 | 4,814 | 13 | - | - | 30 | 1 | - | _ | 7,504 |
| BATUAN | 10 | - | 1 | 11 | 963 | - | 2,314 | 49 | - | _ | 851 | - | 245 | - | - | _ | 4,422 |
| BIEN UNIDO | _ | - | - | - | 189 | - | - | _ | - | - | 456 | _ | 493 | - | - | _ | 1,137 |
| BILAR | _ | _ | 5 | 5 | 1,512 | 96 | 1,180 | 227 | 9 | 205 | 741 | 44 | 311 | 16 | _ | _ | 4,341 |
| BUENAVISTA | 19 | _ | 7 | 26 | 4,016 | - | 160 | | 3,494 | - | 80 | | 388 | - | _ | _ | 8,138 |
| CALAPE | | - | | | 2,927 | _ | | - | 5,171 | _ | 174 | _ | 279 | _ | _ | | 3,381 |
| CANDIJAY | | | _ | | 2,462 | 884 | 198 | 173 | 15 | 8 | 168 | | 325 | 50 | | | 4,283 |
| CARMEN | | | _ | - | 9,505 | 1,414 | 174 | 25 | 718 | 256 | 2,196 | 87 | 2,259 | 309 | - | <u>-</u> | 16,943 |
| CATIGBIAN | 4 | - | 2 | 6 | 3,182 | 2,172 | 1,694 | 206 | / 10 | 230 | 2,196 | 686 | 2,259 | 236 | - | - | 8,524 |
| CLARIN | 4 | - | | 0 | 2,049 | 268 | 1,094 | 200 | - | - | 150 | 536 | 112 | 65 | - | | 3,180 |
| | - | - | - | - | _ | | 120 | 27 | 2 2 4 2 | - | | 530 | | | - | | |
| CORELLA | - | - | - | - | 563 | 4 | 130 | 37 | 2,242 | - | - | - | 4 | - | - | - | 2,980 |
| CORTES | - | - 10 | - | - 15 | 754 | 101 | 26 | 2776 | 1,994 | - | 1 000 | | 5 | - | - | - | 2,778 |
| DAGOHOY | 2 | 13 | - | 15 | 829 | 181 | 514 | 276 | 7 | - | 1,898 | 33 | 2,242 | 7 | - | - | 5,987 |
| DANAO | 11 | - | 1 | 12 | 3,628 | 794 | 36 | 151 | 928 | 88 | 902 | 71 | 381 | 66 | - | - | 7,043 |
| DAUIS | - | - | - | - | 280 | - | 2,376 | - | 537 | - | 26 | - | 92 | - | - | - | 3,309 |
| DIMIAO | - | - | - | - | 895 | 489 | 90 | 45 | 173 | 212 | 926 | 259 | 78 | 45 | - | - | 3,212 |
| DUERO | - | - | 2 | 2 | 541 | 461 | - | 1 | - | - | 125 | 17 | 34 | 6 | - | - | 1,185 |
| GARCIA HERNANDEZ | - | - | - | - | 674 | 930 | 30 | 464 | 175 | 200 | 220 | 109 | 90 | 14 | - | - | 2,906 |
| GETAFE | - | - | - | - | 3,269 | - | - | - | 1,532 | - | 9 | - | 753 | - | - | - | 5,564 |
| GUINDULMAN | - | - | - | - | 1,989 | 1,603 | 107 | 65 | 5 | 10 | 46 | 23 | 164 | 33 | - | - | 4,044 |
| INABANGA | - | - | - | - | 5,878 | 605 | 27 | - | 432 | - | 69 | 124 | 260 | 36 | - | - | 7,430 |
| JAGNA | - | - | 1 | 1 | 853 | 1,393 | - | 12 | - | 170 | 147 | 65 | 45 | 23 | - | - | 2,707 |
| LILA | - | - | - | - | 900 | 5 | - | - | 19 | 40 | - | - | 36 | - | - | - | 1,001 |
| LOAY | - | - | - | - | 1,684 | 5 | 2 | - | 32 | 2 | 31 | - | 22 | - | - | - | 1,779 |
| LOBOC | - | - | - | - | 1,464 | 126 | 88 | 52 | 50 | 258 | 454 | 81 | 47 | 4 | - | - | 2,625 |
| LOON | - | - | - | - | 3,980 | 431 | 657 | 203 | - | - | 791 | 27 | 357 | - | - | - | 6,446 |
| MABINI | - | - | - | - | 1,326 | 29 | 30 | 29 | 1,862 | 43 | 878 | - | 1,063 | - | - | _ | 5,260 |
| MARIBOJOC | - | | - | - | 2,601 | 16 | 482 | 62 | | - | 11 | _ | 16 | _ | - | _ | 3,187 |
| PANGLAO | - | - | - | - | 630 | - | 2,280 | - | 202 | - | - | - | 450 | - | - | - | 3,562 |
| PILAR | _ | - | 5 | 5 | 1,226 | 280 | 8 | 43 | 56 | _ | 3,061 | 68 | 2,155 | 30 | _ | | 6,926 |
| PRES. CARLOS P. GARCIA | - | _ | _ | | 2,103 | | - | - | 160 | _ | 127 | - | 474 | - | _ | | 2,865 |
| SAGBAYAN | 3 | 10 | _ | 13 | 572 | 3,843 | 337 | 68 | _ | _ | 129 | 1,160 | 81 | 613 | _ | _ | 6,803 |
| SAN ISIDRO | - | - 10 | _ | _ | 2,348 | 146 | 619 | 21 | _ | _ | 83 | -,100 | 14 | 1 | _ | <u> </u> | 3,232 |
| SAN MIGUEL | 5 | - | 3 | 8 | 2,815 | 32 | 94 | 10 | 662 | 22 | 3,543 | 7 | 2,334 | 48 | | | 9,567 |
| SEVILLA | J | - | 3 | O | 1,200 | 20 | 170 | 35 | 185 | 22 | 1,981 | 10 | 2,334 | - 40 | - | - | 3,614 |
| | - | - | - | - | | 762 | 170 | 132 | | <u>-</u> | 555 | 285 | 749 | 19 | - | - | |
| SIERRA BULLONES | - | - | - | - | 2,495 | | | | 140 | - 11 | | 285 | | | - | - | 5,168 |
| SIKATUNA TACRU ARAN CITY | - | 3 | 5 | 8 | 1,806 | 17 | 244 | 56 | 140 | 11 | 4 | - | 3 | - | - | - | 2,282 |
| TAGBILARAN CITY | - 1 | - | - | - | 325 | - | - 246 | - | 1,355 | - | - 0.00 | - | 3 | - | - | - | 1,683 |
| TALIBON | 1 | - | - | 1 | 4,802 | - | 246 | - | 2,092 | - | 860 | - | 2,296 | - | - | - | 10,295 |
| TRINIDAD | 4 | - | - | 4 | 1,590 | | 21 | - | 1,646 | - | 4,975 | 9 | 3,447 | - | - | - | 11,687 |
| TUBIGON | - | - | - | - | 2,706 | 331 | - | - | - | - | 274 | 248 | 295 | 30 | - | - | 3,884 |
| UBAY | 5 | - | 5 | 10 | 2,479 | - | - | - | 1,957 | - | 5,263 | - | 6,791 | - | - | - | 16,490 |
| VALENCIA | - | - | - | - | 1,131 | 854 | 294 | | 57 | 100 | 778 | 502 | 176 | | - | - | 4,136 242,206 |
| | - | 26 | 36 | 10 - 126 | | 854 19,828 | 294 18,698 | 209 3,986 | | 100 1,685 | , | 502 4,451 | | 35 1,688 | | - | |

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

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 |
|-----------------------------|-----------------------|-----------|-----------------|----------------------------------|------------------|--------------------------|-----------------------|-------------------|------------------|------------------|------------------|----------------------------|------------------|
| | 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 |
| Cacao | 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 | |

| | | | | 3, 23, 332, 32 | , | | | | | | >4500 |
|----------|---------------------------|--------|----------|---------------------------|----|-----------|--|---------|---------------------|------|---------------------------------------|
| SLOPE (% | 6) | | SOIL DRA | AINAGE | | SOIL REA | CTION (pH) | SOIL TE | XTURE | | ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' |
| 0 - 3 | - level to gently sloping | | ED | - excessively drained | | < 4.5 | - extremely acid | Coarse | | Fine | <u> </u> |
| 3 - 8 | - gently sloping to undul | lating | WD | - well drained | | 4.5 - 5.0 | very strongly acid | S | - sand | SC | - sandy clay |
| 8 - 18 | - undulating to rolling | | MWD | - moderately well drained | l | 5.1 - 5.5 | - strongly acid | LS | - loamy sand | SiC | - silty clay |
| 18 - 30 | - rolling to moderately s | steep | SPD | - somewhat poorly drained | ed | 5.6 - 6.0 | - medium acid | CSL | - coarse sandy loam | С | - clay |
| 30 - 50 | - steep | | PD | - poorly drained | | 6.1 - 6.5 | - slightly acid | SL | - sandy loam | НС | - heavy clay |
| > 50 | - very steep | | VPD | - very poorly drained | | 6.6 - 7.2 | - neutral | Mediun | 1 | | |
| | | | | | | 7.3 - 7.8 | - mildly alkaline | FSL | - fine sandy loam | | |
| SOIL DEP | TH (cm) | | SURFACE | E IMPEDIMENT | | 7.9 - 8.4 | - moderately alkaline | L | - loam | | |
| 0 - 30 | - very shallow | | ROCK OU' | TCROPS | | > 8.5 | - strongly alkaline | SiL | - silt loam | | |
| 30 - 50 | - shallow | | < 10% | - none - few | | | | CL | - clay loam | | |
| 50 - 100 | - moderately deep | | 10 - 30% | - common | | | | SiCL | - silty clay loam | | |
| > 100 | - deep to very deep | | > 30% | - many | | | | SCL | - sandy clay loam | | |
| | | | | | | | | | | | |

SOIL DEPTH

Sh2 - Moderately deep (50 - 100cm) Sh3 - Very shallow to shallow (< 50cm)

LAND LIMITATIONS DESCRIPTION AND COMBINATIONS

| ELEVATION | SOIL DRAINAGE |
|---------------------|---|
| El2 - 1000m - 1500m | D2 - Somewhat poorly drained to poorly drained |
| El3 -> 1500m | D3 - Very poorly drained or excessively drained |
| SLOPE/TOPOGRAPHY | SOIL TEXTURE |

T2 - Undulating to moderately steep

T3 - Steep to very steep

| SOIL | TEXTURE | ROCK OUTCROPS | |
|------|------------------|---------------|--|
| Tc | - Coarse texture | Rc2 - Common | |
| | | Rc3 - Many | |

SOIL EROSION E2 - Moderate erosion E3 - Severe erosion

FLOODING F2 - Moderate seasonal flooding F3 - Severe seasonal flooding

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.

CLIMATE TYPE

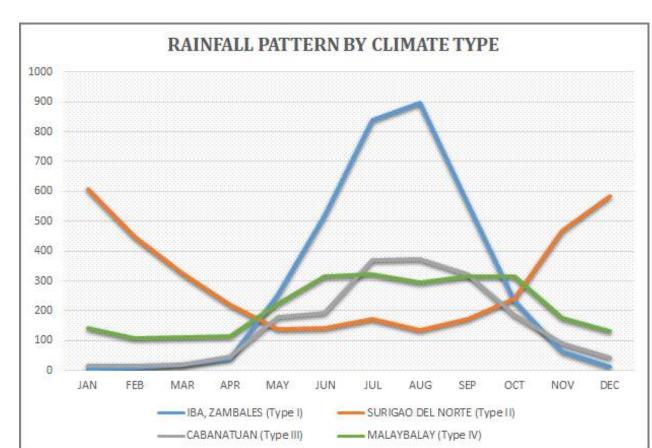
TYPE I: Two pronouced season, dry from November to April and **TYPE II**: No dry season with a very pronounced maximum rain wet during the rest of the year. Maximum rain period is from June to September

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

Province of Bohol 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.

| CODE | LAND LIMITATION | CODE | LAND LIMITATION | CODE | LAND LIMITATION |
|-----------|-----------------|------|-------------------|------|-------------------|
| 1 | E2-Sh2-Rc2 | 11 | T2-E3-Rc2 | 21 | T3-E3-Rc3 |
| 2 | El2 | 12 | T2-E3-Rc3 | 22 | T3-E3-Sh2-Rc3 |
| 3 | El2-E2-Sh2-Rc3 | 13 | T2-E3-Sh2-Rc3 | 23 | T3-E3-Sh3-Rc3 |
| 4 | El2-E3-Rc3 | 14 | T2-El2 | 24 | T3-El2-E3-Rc2 |
| 5 | El2-E3-Sh2-Rc3 | 15 | T2-El2-E3-Rc3 | 25 | T3-El2-E3-Sh2-Rc3 |
| 6 | F2-D2 | 16 | T2-El2-E3-Sh2-Rc3 | 26 | T3-El2-E3-Sh3-Rc3 |
| 7 | F3-D2 | 17 | T2-F3-D2 | 27 | T3-F3-D1 |
| 8 | Sh2-Rc2 | 18 | T3 | | |
| 9 | T2 | 19 | Т3-Е3 | | |
| <i>10</i> | T2-E3 | 20 | T3-E3-Rc2 | | |
| | | | | | |

| CODE | LAND USE |
|------|---------------------------|
| 2 | Rice paddy, non-irrigated |
| 4 | Corn |
| 81 | Coffee |
| 82 | Cacao |
| 116 | Coconut |
| 126 | Grassland |
| 134 | Shrubland, unmanaged |

